Southern Medical Journal

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Southern Medical Journal

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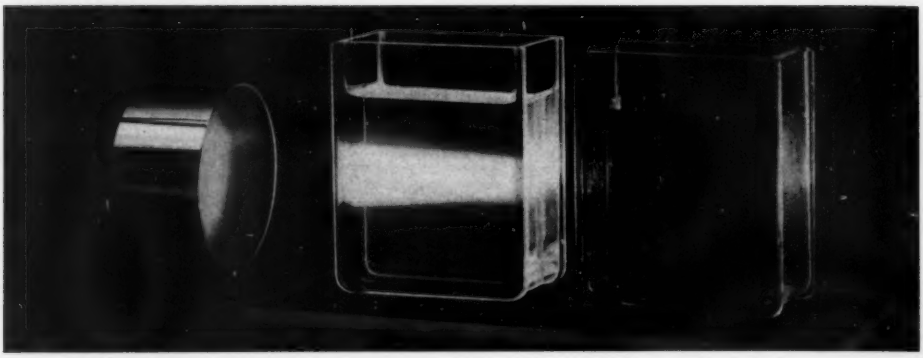

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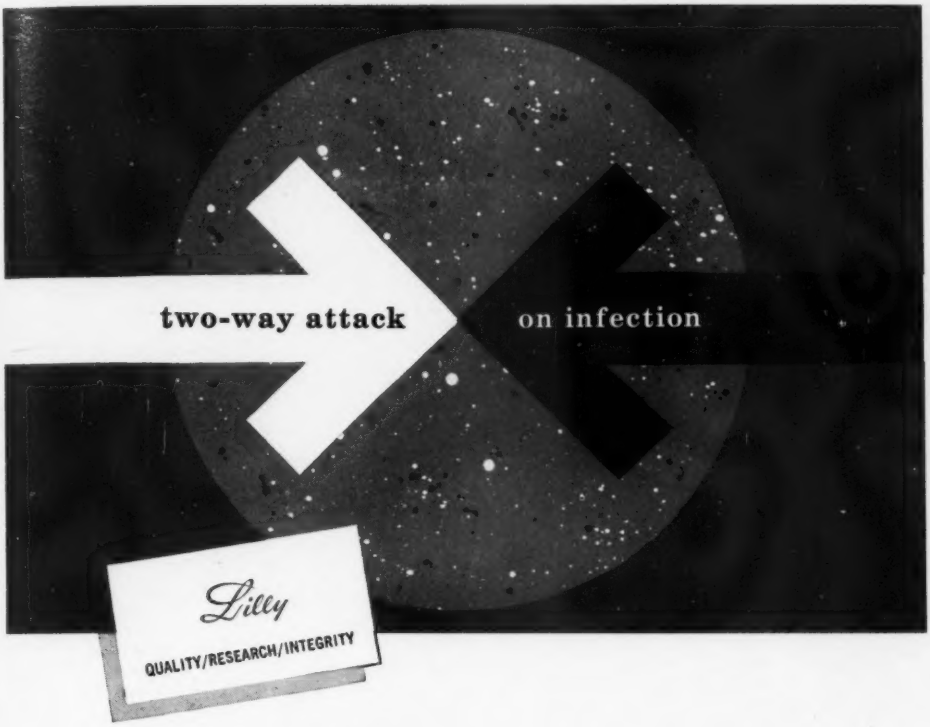

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age	34	65	77	62	58	51	41
Smithwick group	4	3	4	3	3	3	4
Blood Pressure BEFORE	195/130	205/115	210/130	250/115	220/130	205/110	215/120
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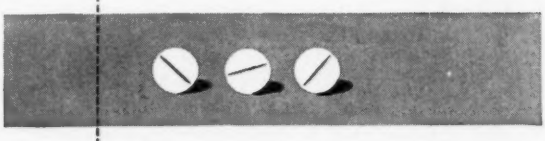

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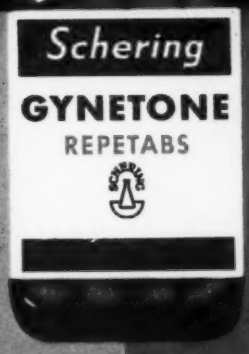

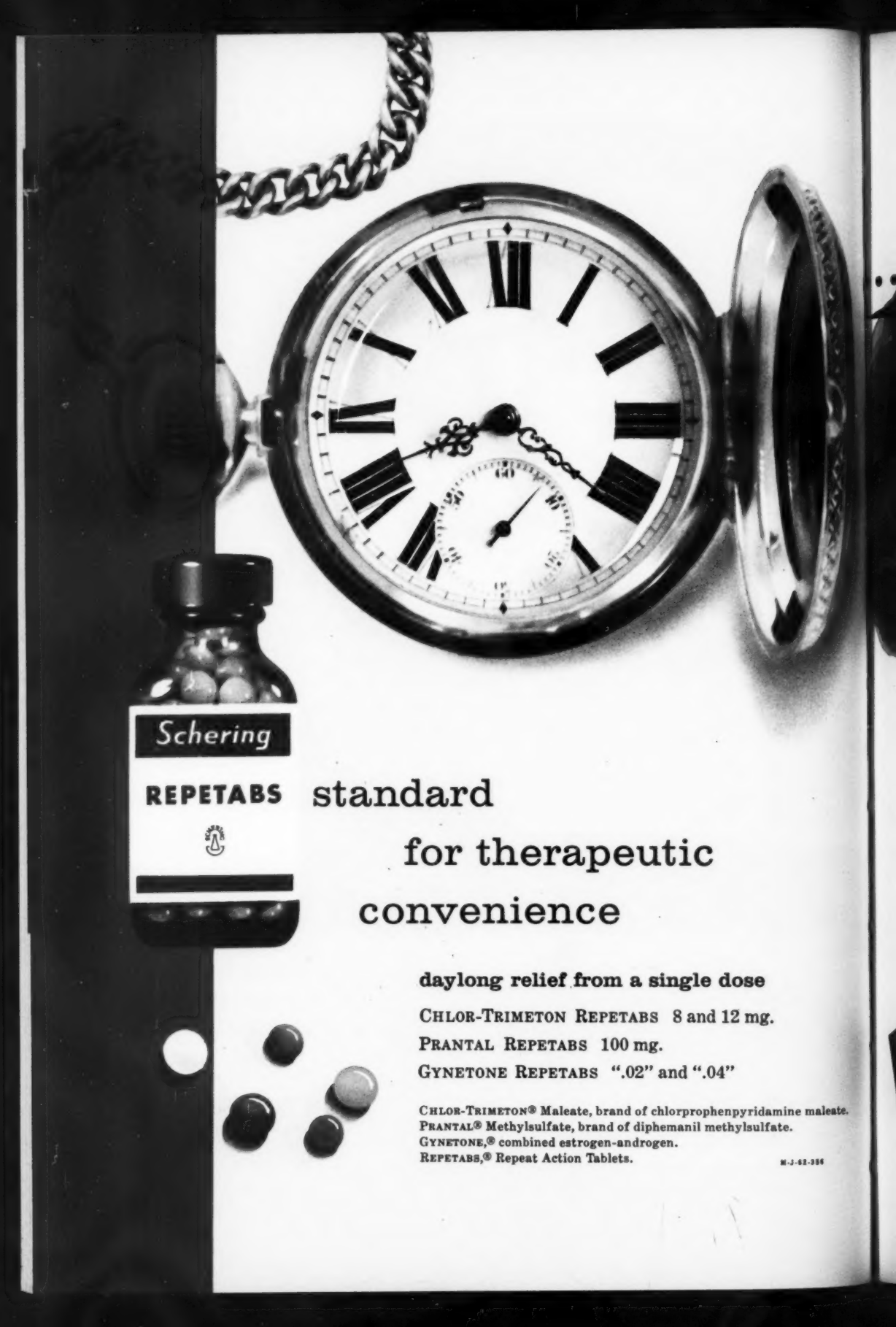

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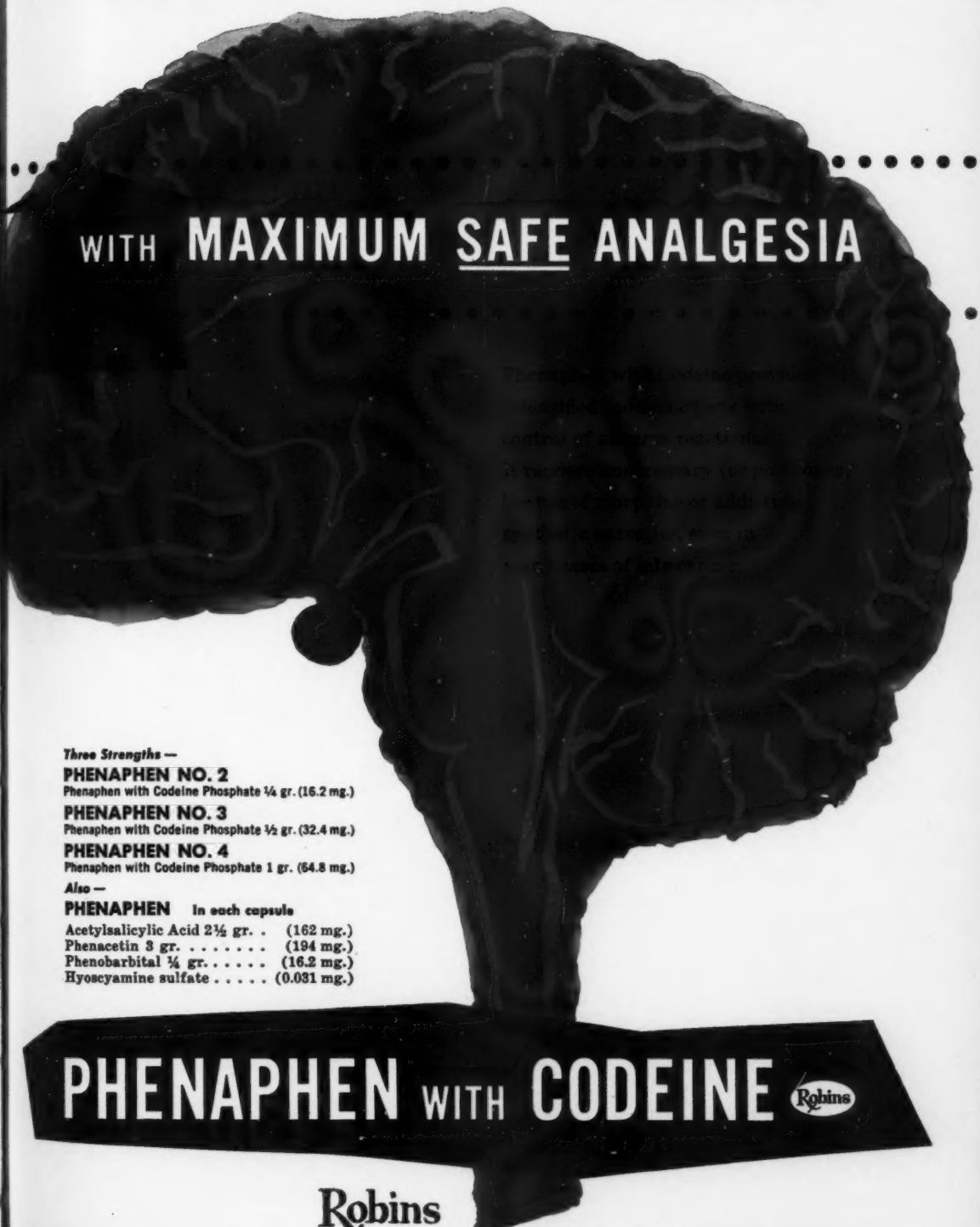

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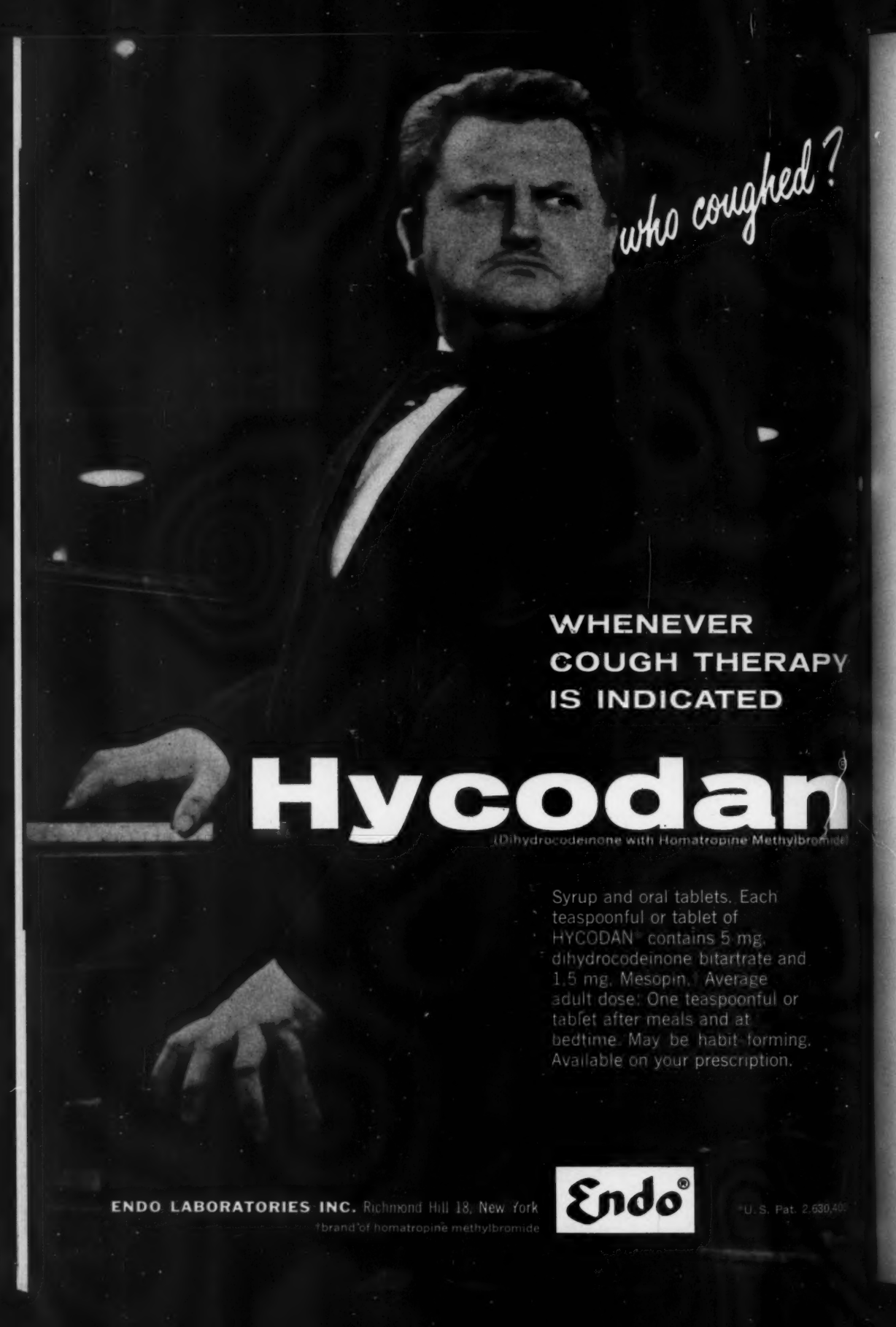
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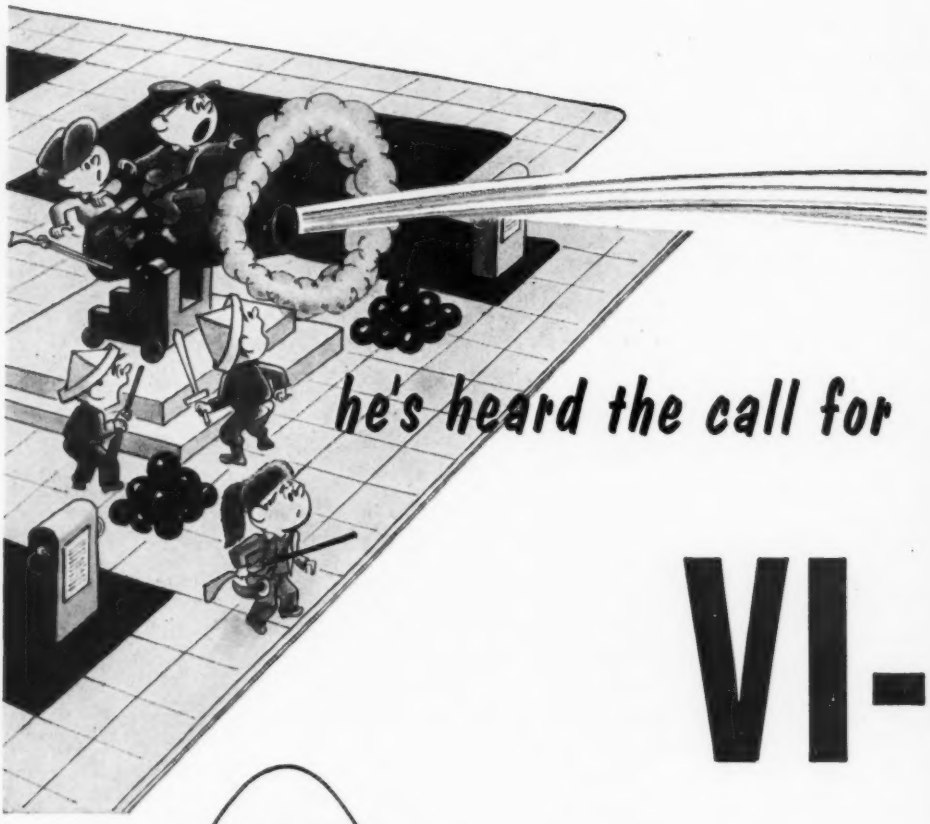

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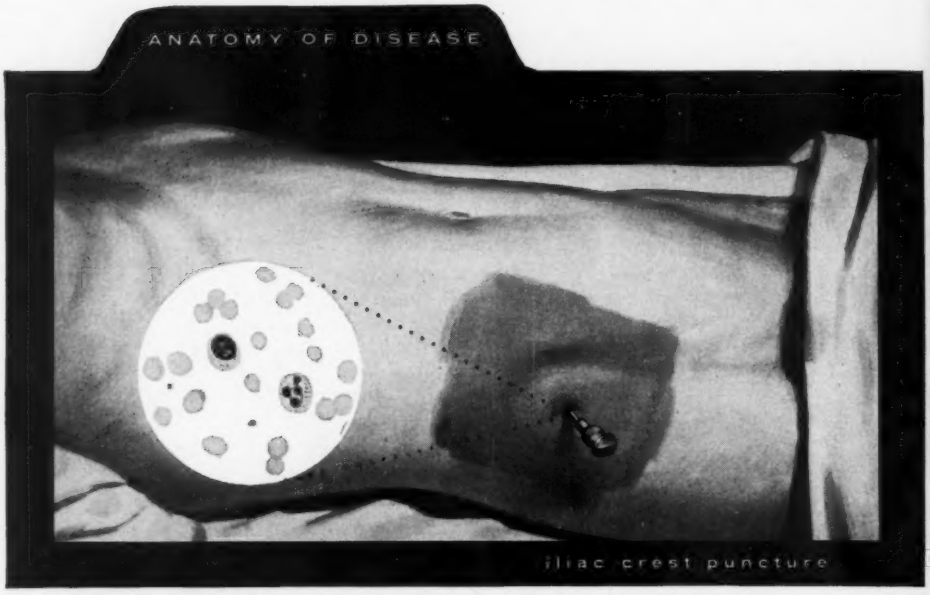

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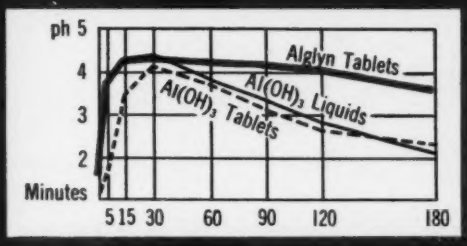

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1. Rossett, N.E. and Rice, M.L., Jr.: Gastroenterology, 26:490, 1954.
2. Hammarlund, E.R. and Rising, L.W.: J. Am. Pharm. Assoc., Scientific Edition, 38:586, 1949.

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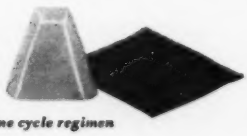

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—GARDNER, F. H., J. LAB. & CLIN. MED. **41**:56 (JAN.) 1953.

". . . 57 of the 58 [pregnant] patients (98.2 per cent) maintained or improved their hemoglobin [with Roncovite] . . ."
—HOLLY, R. G.: OBST. & GYNEC. **5**:562 (APRIL) 1955.

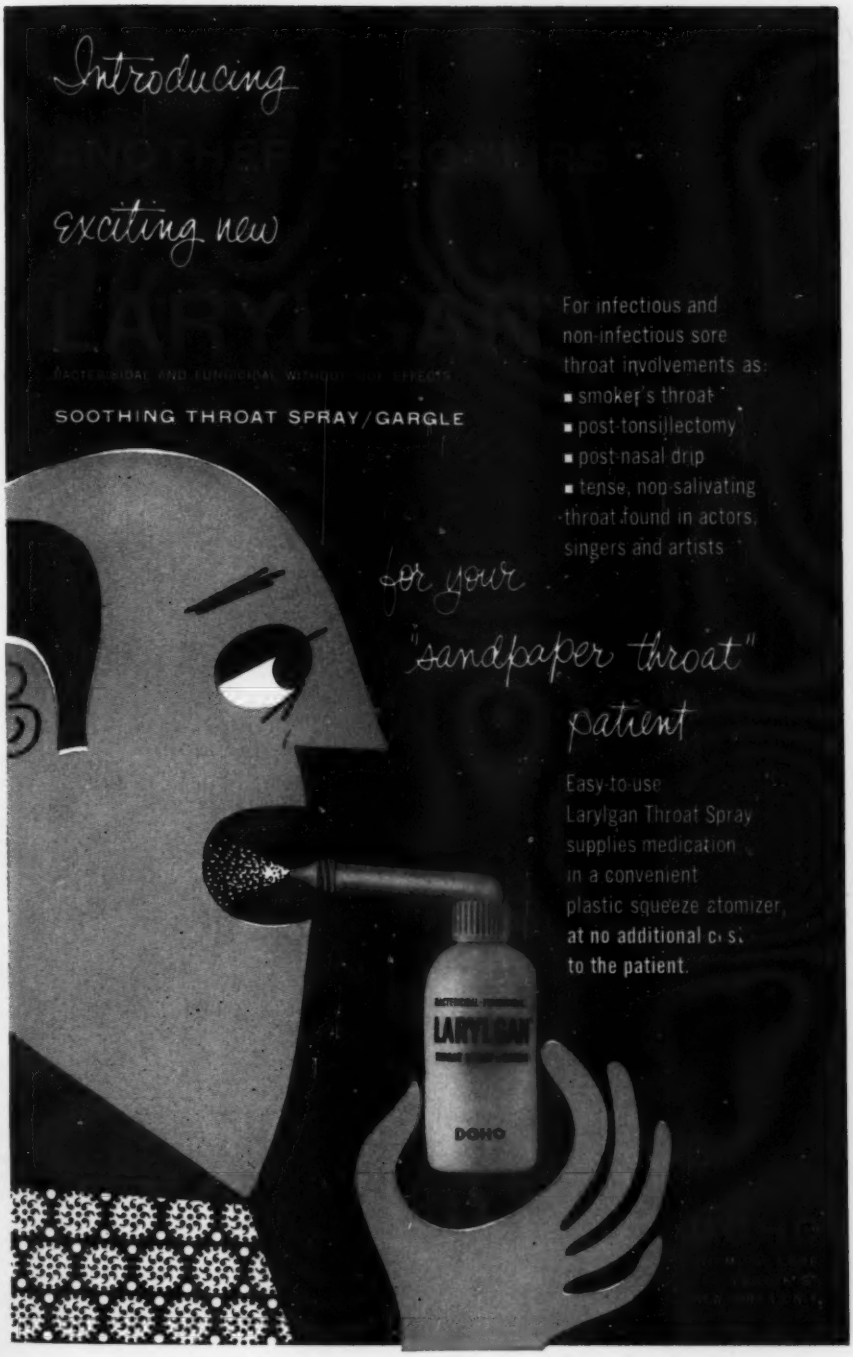
With Roncovite. . . . most patients felt an increased sense of well-being when hemoglobin levels were elevated."
—HILL, J. M., LAIOUS, J. AND SEBASTIAN, F. J.: TEXAS J. MED. **51**:686 (OCT.) 1955.

DOSAGE

One tablet after each meal and at bedtime. Children 1 year or over, 0.6 cc. (10 drops); infants less than 1 year, 0.3 cc. (5 drops) once daily diluted with water, milk, fruit or vegetable juice.

LLOYD BROTHERS, INC. CINCINNATI 3, OHIO

"IN THE INTEREST OF MEDICINE SINCE 1870"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for your
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For infectious and non-infectious sore throat involvements as:
■ smoker's throat
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■ tense, non-salivating throat found in actors, singers and artists
Easy-to-use Larylgan Throat Spray supplies medication in a convenient plastic squeeze atomizer, at no additional cost to the patient.
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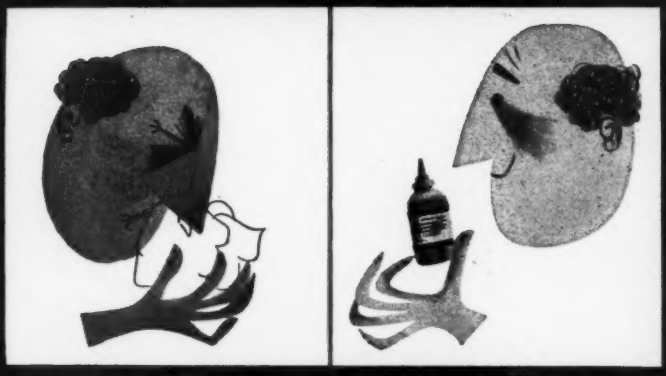
RELIEVE NASAL CONGESTION SAFELY



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nasal spray

NOW BACTERICIDAL! ALSO EFFECTIVE AGAINST ANTIBIOTIC RESISTANT STRAINS OF BACTERIA!

NOT JUST ANOTHER DECONGESTANT

Tests prove New Rhinalgan superior to nasal decongestants with:

1. PRESERVATIVES
2. PRESERVATIVES AND ANTIBIOTICS
3. PRESERVATIVES AND QUATERNARY AMMONIUM SALTS

Formula: Desoxyephedrine 0.22%, Antipyrine 0.28% in an isotonic aqueous solution with 0.12% Laurylammonium Saccharinate, 0.1% Pyrilamine Maleate, Flavored—0.001% Crystal Violet in 2% DOHO Glycerol.

Substantiating data upon request

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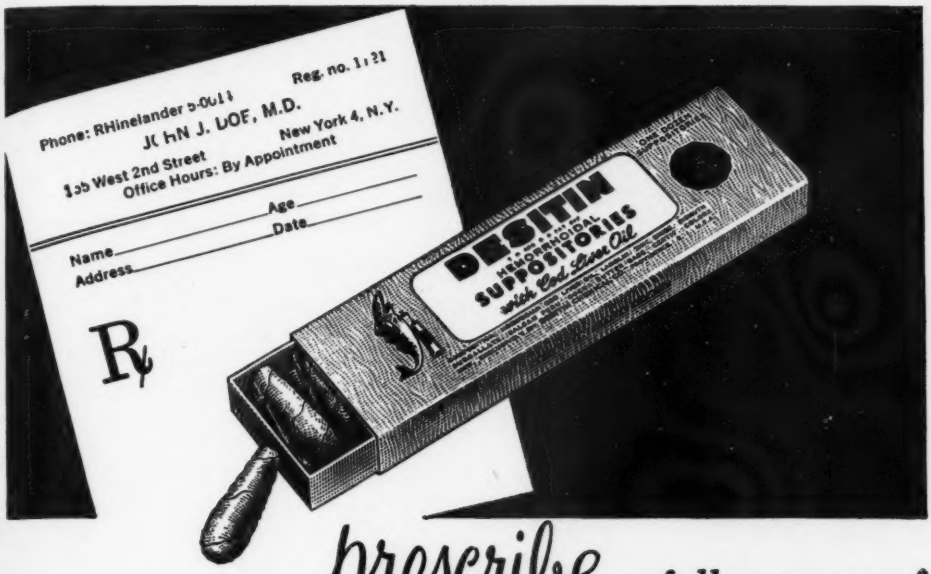

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new nutritional deconstipant

Not that we think you're still prescribing 1890-vintage laxatives, but . . .

FOR THE FIRST TIME YOU CAN NOW PRESCRIBE THE TRULY MODERN MODANE THERAPY FOR CONSTIPATION AND THE ATONIC BOWEL!

- *Over-Night Relief* through the gently persuasive bowel regulation of Danthron
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For the first time . . . these two drugs are combined to accomplish this complete Modane therapy.

MODANE Tablets, Warren-Teed—1,8 dihydroxyanthraquinone (danthron) 75 mg. and d-calcium pantothenate 25 mg. Bottles of 100, 500, 1,000.

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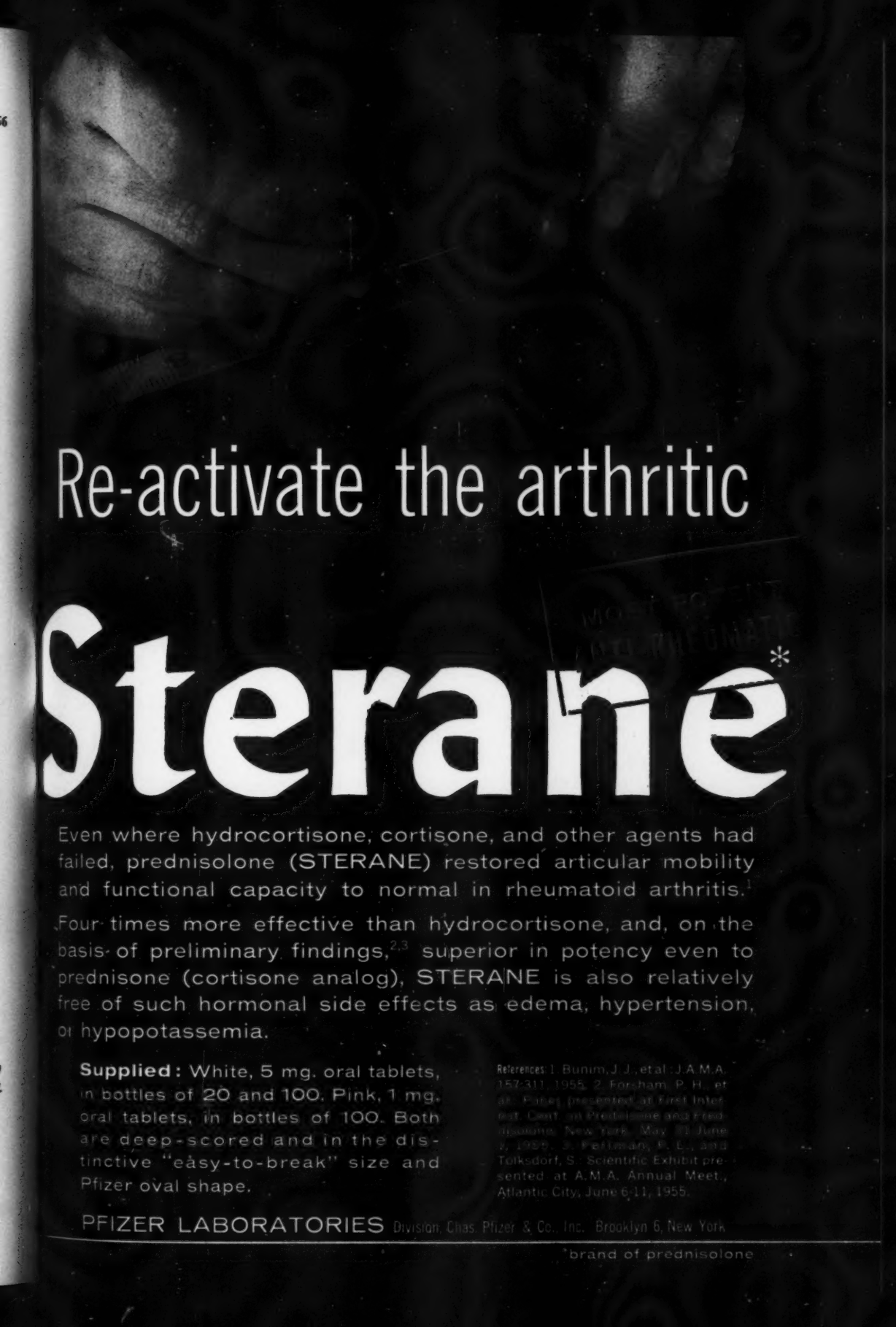

Even where hydrocortisone, cortisone, and other agents had failed, prednisolone (STERANE) restored articular mobility and functional capacity to normal in rheumatoid arthritis.[1]

Four times more effective than hydrocortisone, and, on the basis of preliminary findings,[2,3] superior in potency even to prednisone (cortisone analog), STERANE is also relatively free of such hormonal side effects as edema, hypertension, or hypopotassemia.

Supplied: White, 5 mg. oral tablets, in bottles of 20 and 100. Pink, 1 mg. oral tablets, in bottles of 100. Both are deep-scored and in the distinctive "easy-to-break" size and Pfizer oval shape.

References: 1. Bunim, J. J., et al.: J.A.M.A. 157:311, 1955. 2. Forsham, P. H., et al.: Paper presented at First Internat. Conf. on Prednisone and Prednisolone, New York, May 31-June 2, 1955. 3. Perlman, P. L., and Tolksdorf, S.: Scientific Exhibit presented at A.M.A. Annual Meet., Atlantic City, June 6-11, 1955.

PFIZER LABORATORIES Division, Chas. Pfizer & Co., Inc. Brooklyn 6, New York

*brand of prednisolone

CLISTIN IN NASAL ALLERGIES... HAY FEVER... POLLEN SENSITIVITY

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CLINICAL APPRAISALS OF A NEW ANTIHISTAMINIC
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"87 per cent reported some relief of their symptoms following the administration of this antihistamine, and in 76 per cent the relief was graded as moderate to complete . . . Undesirable side effects associated with the administration of this antihistaminic agent were infrequent and usually mild in nature."[1]

"Carbinoxamine maleate has as potent antihistamine action and as low an incidence of side-effects as has any other previously employed histamine antagonist."[2]

"Clistin maleate is a potent antihistaminic drug with only weak sedative properties and should be a useful adjunct in the treatment of allergic conditions."[3]

CLISTIN® MALEATE

(Carbinoxamine Maleate, McNeil)

Dosage forms: Tablets Clistin Maleate, 4 mg.
Tablets Clistin R-A (repeat action), 8 mg.
Elixir Clistin Maleate, 4 mg. per 5 cc.
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Tablets Clistanal (Clistin Maleate, 2 mg. plus APC)

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PHILADELPHIA 32, PENNSYLVANIA

1. Johnson, H. L., Jr.: Clinical Evaluation of a New Antihistaminic: Clistin Maleate, Amer. Pract. & Digest. Treat. 5:862 (Nov.) 1954.

2. Council on Pharmacy & Chemistry: New and Non-official Remedies, 1955, Philadelphia, J. B. Lippincott Co., 1955, p. 8.

3. Beale, H. D., et al.: Clistin Maleate. A Clinical Appraisal of a New Antihistaminic, J. Allergy 25:521 (Nov.) 1954.

Quickly Relieves Nasal Congestion in Colds, Sinusitis, Allergic Rhinitis

contains:

Phenylephrine Hydrochloride 0.15%
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In an isotonic saline menstruum

RHINALL *nose drops*

A better nasal medication to assure your patient of prompt, prolonged relief.

- Safe for children and adults
- No burning or irritation
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Same proven formula available in ½ oz. plastic spray bottle. Samples on request.

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For the Difficult-to-Control Hypertensive

Effective... Safe... Easy-to-Prescribe Therapy

Rauwiloid® + Veriloid®

IN MODERATE TO SEVERE HYPERTENSION

Each slow-dissolving tablet contains 1mg. Rauwiloid (alseroxylon) and 3mg. Veriloid (alkavervir)...permits lower, better-tolerated doses of Veriloid to exert full effect. Initial dose, one tablet, t.i.d., p.c.

Rauwiloid® + Hexamethonium

IN SEVERE, OTHERWISE INTRACTABLE HYPERTENSION

Provides smoother, less erratic response to oral hexamethonium and permits greatly reduced dosage of the latter drug (up to 50% less). Each tablet contains 1mg. Rauwiloid and 250mg. hexamethonium chloride dihydrate. Initial dose, ¼ tablet q.i.d.

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specific enzyme test for urine glucose

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complete specificity ... unaffected by non-glucose reducing substances ... differentiates glucose from other urine-sugars ... thousands of tests reveal no substance causing a false positive.

extreme sensitivity ... detects glucose concentrations of 0.1% or less.

utmost simplicity and convenience ... a CLINISTIX Reagent Strip moistened with urine turns blue when glucose is present.

qualitative accuracy ... used whenever presence or absence of glucose must be determined rapidly and frequently. CLINISTIX does not attempt to give quantitative results because so many factors in urine influence enzyme reactions.

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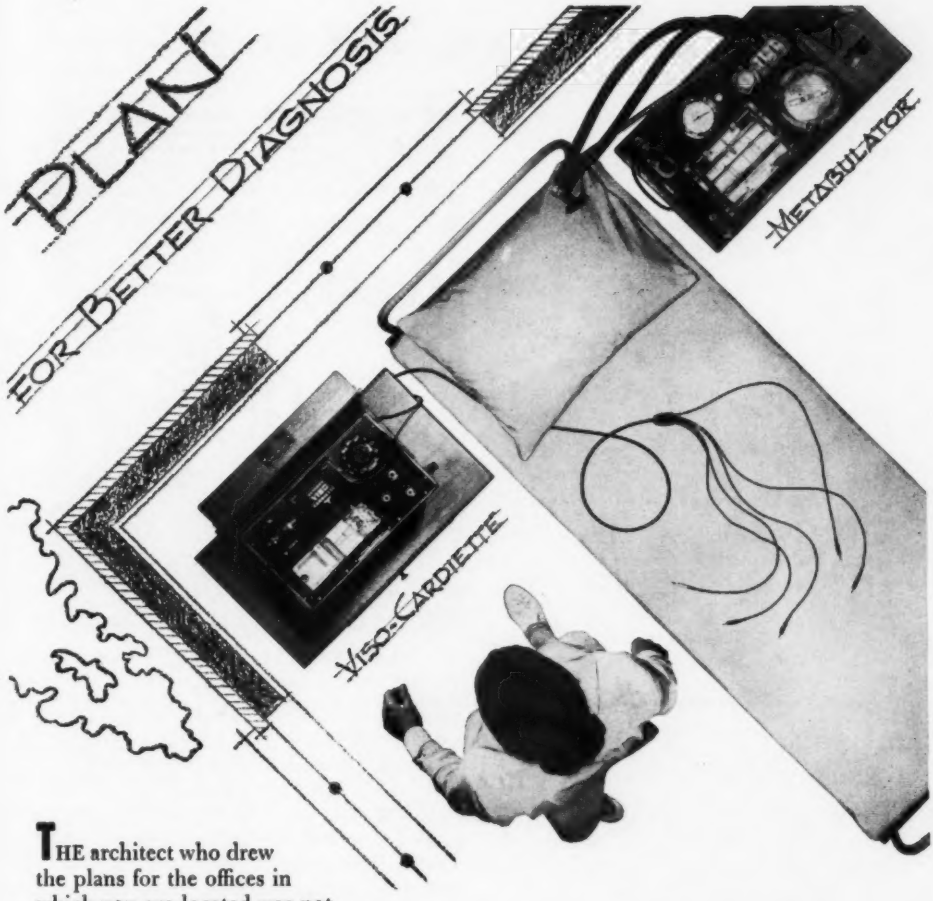

THE architect who drew the plans for the offices in which you are located was not *completely* concerned with how the tenant would make use of the space.

That, of course, was left to *your* planning, and only you know enough of the "anatomy" of your practice to decide which furnishings and instruments are needed.

When electrocardiographs and/or metabolism testers are considered as examining aids, their inclusion in the specifications of a plan to build for better diagnosis is an important decision.

To help you determine the value of these instruments, we will gladly arrange for you to include either or both of them in your "floor plan" during a *no-obligation-to-you* trial period. This will give you an opportunity to judge them from your own point of view before the final "blueprint" is drawn and purchase is made.

When you plan with Sanborn you receive extra benefits that can come only from a direct-to-user policy. The interest in and responsibility towards you as the user is with Sanborn Company instead of an intermediate source.

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HOW OLD IS OLD?

"The really old people are those 10 years older than myself."[1]

"In the lay mind, anyone past 60 is ready for the discard . . ."[2]

". . . there are only three principal phases in the span of life: infancy, adolescence and senescence."[3]

"One finds alert, interesting, active folks in the 80's and, on the other hand, there are people in the 20's and 30's who have all the characteristics of old age."[4]

THE REAL QUESTION

To the physician on the firing line of daily practice, the question of "how old is old?" seems academic. To him, a more valid question is "How can I allay the effects of the aging process?"

FIVE PROBLEMS IN AGING

The answer, according to most authorities, is manifold, for five treatable problems seem to predominate. One, obviously, is gonadal hormone decline. Another is mild anemia. A third is the decreased production of gastric and digestive enzymes. Mineral-vitamin deficiency is the fourth. And the fifth—perhaps most important—is inadequate high-quality protein intake.

THERAPY FOR AGING

Judging from this confused clinical picture of aging, therapy for the problem would appear difficult. However, most physicians agree that a product which could correct most or all of these five commonest problems would remove past obstacles to satisfactory response. Such a product would, essentially, be true "preventive geriatrics."

NEOBON'S COMPREHENSIVE FORMULA

NEOBON®, a product of Roerig research, is a blended combination of the five most commonly indicated factors for prevention or treatment of the nonacute conditions of aging. Each soft, soluble capsule provides:

Non-stimulatory gonadal hormone replacement

balanced hematinic component

digestant enzyme replacement

specially formulated mineral-vitamin combination

new lysine, for protein improvement*

* Protein deficiency among the aging apparently stems from their excessive intake of white-flour foods which furnish incomplete protein of low biologic value. White bread protein, for example, has been shown by nutrition studies in animals[5] to be deficient only in the amino acid, lysine. In human subjects metabolic determinations indicate that the addition of supplemental lysine to a basal white-flour protein diet can convert a negative nitrogen balance into a positive one.[6]

A WORD ABOUT SYMPTOMATOLOGY

In spite of jokes to the contrary, the patient who states in the professional office that "old age is creeping up" is a rare bird indeed.

Seldom is old age the presenting complaint. Thus the physician, after correcting the specific complaints, must re-evaluate the whole person to judge his candidacy for "preventive geriatrics." Such people have much to gain from NEOBON therapy. The rewards are fuller, more active, more pleasurable years for patients past 40. The daily dose (3 capsules) of NEOBON provides:

L-lysine	150 mg.
Methyltestosterone	3 mg.
Ethinyl Estradiol	0.018 mg.
Pancreatic Substance***	150 mg.
Glutamic Acid	90 mg.
Rutin	15 mg.
Vitamin A (Palmitate)	6,000 U.S.P. Units
Vitamin D (Irradiated Ergosterol)	600 U.S.P. Units
Vitamin E (as Tocopheryl Acetate)	15 I.U.
Calcium Pantothenate	15 mg.
Thiamine Mononitrate (Vitamin B_1)	1.5 mg.
Riboflavin (Vitamin B_2)	1.5 mg.
Pyridoxine Hydrochloride (Vitamin B_6)	1.5 mg.
Niacinamide	150 mg.
Ascorbic Acid (Vitamin C)	150 mg.
Vitamin B_{12} (Oral Concentrate)	3 mcg.
Folic Acid	0.3 mg.
Liver-Stomach Substance**	300 mg.
Iron (from Ferrous Gluconate)	10.2 mg.
Cobalt (from Cobaltous Sulfate)	0.1 mg.
Molybdenum (from Sodium Molybdate)	2 mg.
Copper (from Cupric Sulfate)	1 mg.
Manganese (from Manganous Sulfate)	1 mg.
Magnesium (from Magnesium Sulfate)	6 mg.
Iodine (from Potassium Iodide)	0.15 mg.
Potassium (from Potassium Sulfate)	5 mg.
Zinc (from Zinc Sulfate)	1.2 mg.

**Enzymatically active defatted material obtained from 1,500 mg. whole fresh liver and stomach.

***Enzymatically active defatted material obtained from 750 mg. of whole fresh pancreas.

Dosage: 3 capsules daily, with meals.

Supplied: Bottles of 60 capsules, prescription only.

NEW NEOBON® LIQUID

A GERIATRIC TONIC

Now also available for your consideration is NEOBON LIQUID, which provides hematinic action, improved carbohydrate and protein utilization, gonadal and thyroid hormone supplementation and a mild antidepressant action.

The pleasant tasting liquid is especially indicated when a combined attack against nutritional, physiological and mental depression is indicated. Each teaspoonful (5 cc.) of pleasant-tasting NEOBON LIQUID contains:

Ferrous Gluconate	30 mg.
Ascorbic Acid	50 mg.
d-Amphetamine Sulfate	0.5 mg.
Folic Acid	167 mcg.
Vitamin B_{12}	2.5 mcg.
l-Thyroxine	0.1 mg.
Ethinyl Estradiol	1 mcg.
Methyltestosterone	1 mg.
Liver Fraction I	25 mg.
Ethyl Alcohol	0.5 cc.

Dosage: One teaspoonful twice daily before meals, or as required.

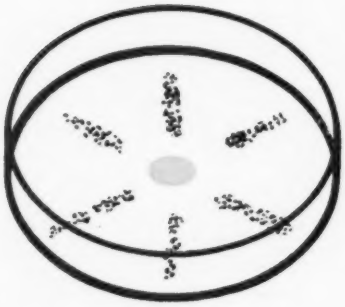
Supplied: In 16 fluid ounce bottles, prescription only.

Bibliography

1. Anonymous. 2. Rosenthal, P.: Geriatrics 10:382 (August) 1955. 3. Lansing, A. I.: Symposium on Problems of Gerontology, National Symposium Series No. 9 (August) 1954. 4. Mason-Hohl, E.: Quoted in W. Va. Med. J. 51:16 (January) 1955. 5. Rosenberg, H. R., et al.: Arch. Biochem. and Biophys. 49:263, 1954. 6. Bricker, M., Mitchell, H. H. and Kinsman, G. M.: J. Nutrition 30:269, 1945. 7. Masters, W. H. and Ballew, J. W.: Geriatrics 10:1, 1 (January) 1955.

ROERIG *CHICAGO 11, ILLINOIS*

IN URINARY TRACT INFECTIONS



sensitivity studies suggest

FURADANTIN's "broad spectrum of antibacterial and antiprotozoal activity *in vitro*"[1] makes it important to include this agent, routinely, in sensitivity tests. Organisms commonly resistant to most of the antibiotics, notably Proteus and Pseudomonas, are often inhibited by FURADANTIN.[2]

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BRAND OF NITROFURANTOIN

". . . may be unique as a wide-spectrum antimicrobial agent that is bactericidal, relatively nontoxic, and does not invoke resistant mutants."[3]

clinical cures confirm

"Clinical studies have demonstrated rapid clinical response of cases of cystitis, prostatitis, and pyelonephritis."[4]

Typical Timetable of Furadantin Effectiveness

In *30 minutes,* antibacterial concentrations in urine.

In *24 hours,* turbid urine is usually clear.

In *3 to 5 days,* most patients are symptom-free and the urine is free of pus cells.

In *one week,* the urine is usually sterile.

SUPPLIED: Tablets, 50 and 100 mg., bottles of 25 and 100.
Oral Suspension, 5 mg. per cc., bottle of 118 cc.

REFERENCES: 1. Mintzer, S., et al.: Antibiotics 3:151, 1953. 2. Felton, F. C., and Kemp, A. P.: J. Urol. 73:718, 1955. 3. Waisbren, B. A., and Crowley, W.: A.M.A. Arch. Int. M. 93:653, 1955. 4. Flippin, H. F., and Eisenberg, G. M.: Antimicrobial Therapy in Medical Practice, Philadelphia, F. A. Davis Company, 1955, p. 40.

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to try it .....
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with EPINEPHRINE 1:50,000

fastest acting local anesthetic— as safe as it is effective

How safe is Xylocaine? In five years, over 500,000,000 injections of Xylocaine HCl Solution have been given for local anesthesia. "The apparent clinical safety of Xylocaine is gratifying, for without this quality, its additional properties would not warrant an enthusiastic report. Nor would safety alone call for a high recommendation unless additional desirable properties were to be found. The truth of the matter is, however, that Xylocaine approaches the ideal drug more closely than any other local anesthetic agent we have today."*

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How does Xylocaine fit into my practice? Xylocaine is the ideal agent for *local infiltration anesthesia* because it is safe, fast acting and of long duration. It is used routinely in daily practice for countless minor surgical procedures such as closure of lacerations, removal of cysts, moles and warts; treatment of abscesses; and in the reduction of fractures.

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It has also become the choice of many physicians for *therapeutic interruption of nerve function by temporary nerve blocks* in herpes zoster, subdeltoid bursitis, fibrositis, myalgia of shoulder muscles, periarthritis due to trauma, and painful postoperative scars. The relief of pain in these conditions at times appears to be the most important part of treatment.

The remarkable *topical anesthetic* properties of Xylocaine HCl Solution further enhance its usefulness for minor operations. Topical anesthesia can be obtained by spraying, by applying packs, by swabbing, or by instilling the solution into a cavity or on a surface.

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Bibliography of approximately 300 Xylocaine references upon request.

*Southworth, J. L., and Dabbs, C. H.: Xylocaine: a superior agent for conduction anesthesia, Anesth. & Analg. *32*:159 (May-June) 1953.

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Pabalate with Hydrocortisone

Clinical evidence indicates that, in Pabalate-HC, the synergistic antirheumatoid effects of hydrocortisone, salicylate, para-aminobenzoate, and ascorbic acid achieve satisfactory remission of symptoms in *up to 85% of cases studied*

—with a much higher degree of safety

—even when therapy is maintained for long periods

—at significant economy for the patient

Each tablet of Pabalate-HC contains 2.5 mg. of hydrocortisone—50% more potent than cortisone, yet not more toxic.

FORMULA

...ach tablet:

...rocortisone (alcohol) ..... 2.5 mg.

...ium salicylate ..... 0.3 Gm.

...ium para-aminobenzoate.. 0.3 Gm.

...bic acid ..... 50.0 mg.

...AGE: Two tablets four times daily.

...tional information on request.

AVAILABLE FOR YOUR PRESCRIPTION **NOW**

A. H. ROBINS CO., INC. RICHMOND 20, VIRGINIA

Ethical Pharmaceuticals of Merit since 1878

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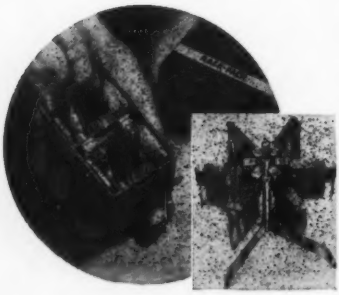
must 'survive' a rigid series of progressive scientific tests to qualify as suitable for surgical use. Those that 'pass' are surgically perfect and uniformly sharp throughout their entire cutting edge. They will remain sharp and useful for longer periods . . . an important factor in economy when yearly volume of purchases is considered.



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METICORTELONE*

(PREDNISOLONE)

- therapy usually undisturbed by sodium retention, edema, weight gain
- excellent relief of arthritic pain, swelling, tenderness
- spares patients salt-poor diets
- up to 5 times as potent as hydrocortisone

Available as 1, 2.5, and 5 mg. tablets; 2.5 and 5 mg. capsules

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ACTH
q 2 days
rather than q 12 h

One injection is effective for 24 to 72 hours or more

By adsorption of ACTH on zinc hydroxide, Cortrophin-Zinc permits extension of ACTH activity for a period of 1 to 3 days. This minimizes the therapeutic "ups and downs" which may occur during ACTH-in-gel therapy and provides smooth corticotropin action for a truly extended period.

Cortrophin-Zinc is easier to handle than gelatin preparations. An aqueous suspension, it flows easily through a 26-gauge needle, eliminating preheating, clogging syringes, and heavy-gauge needles that add to the pain.

Cortrophin-Zinc is supplied in 5 cc vials each cc containing 40 U.S.P. units of corticotropin with 2 mg. of zinc.

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establishing
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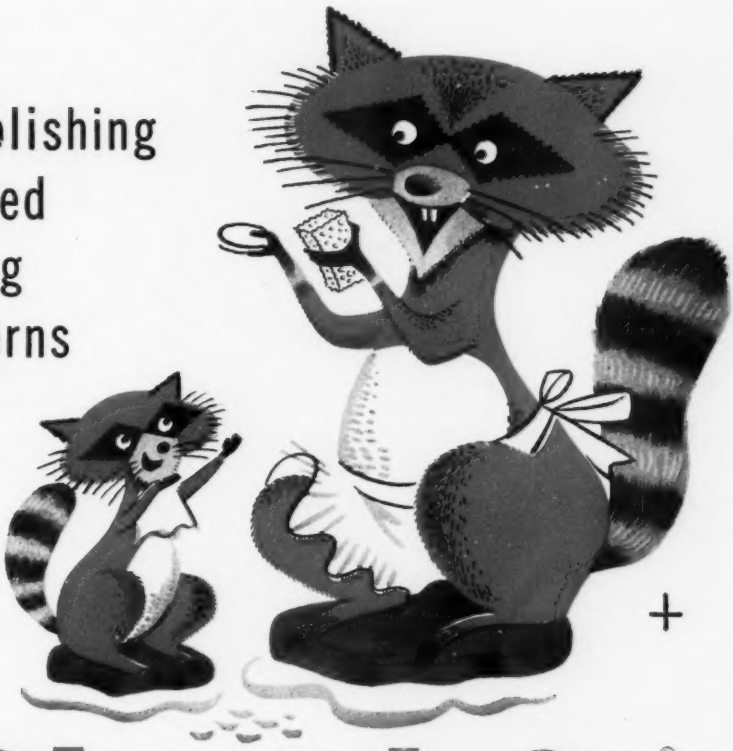

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and the 60-10-70 Basic Plan

In the development of good eating habits, medication is important, not only in initiating control, but also in maintaining normal weight.[1,2,3]

Obedrin contains:

- Methamphetamine for its anorexigenic and mood-lifting effects.
- Pentobarbital as a balancing agent, to guard against excitation.
- Vitamins B_1 and B_2 plus niacin to supplement the diet.
- Ascorbic acid to aid in the mobilization of tissue fluids.

Since Obedrin contains no artificial bulk, the hazards of impaction are avoided. The 60-10-70 Basic Plan provides for a balanced food intake, with sufficient protein and roughage.

Formula

Semoxydrine HCl (Methamphetamine HCl) 5 mg.; Pentobarbital 20 mg.; Ascorbic acid 100 mg.; Thiamine HCl 0.5 mg.; Riboflavin 1 mg.; Niacin 5 mg.

1. Eisfelder, H.W.: Am. Pract. & Dig. Treat., 5:778 (Oct., 1954).
2. Sebrell, W.H., Jr.: J.A.M.A., 152:42 (May, 1953).
3. Sherman, R.J.: Medical Times, 82:107 (Feb., 1954).

Write for 60-10-70 Menu pads, weight charts, and samples of Obedrin.

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"Yessir, since I retired I've been fishing every day!"

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(1) Payne, R. W.; Shetlar, M. R.; Farr, C. H.; Hellbaum, A. A., and Ishmael, W. K.: J. Lab. & Clin. Med. 45:331, 1955. (2) Bunim, J. J.; Williams, R. R., and Black, R. L.: J. Chron. Dis. 1:168, 1955. (3) Holbrook, W. P.: M. Clin. North America 39:405, 1955.

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J. R., male, age 50, when first seen* complained of severe abdominal pain of six weeks' duration. Initial gastrointestinal roentgenologic examination revealed marked hypermotility of the stomach and duodenal bulb. Because of rapid emptying it was not possible to visualize a lesion either in the stomach or duodenal bulb. However, the patient's symptoms strongly suggested an ulcer, and he was reexamined after the injection of 15 mg. of Pro-Banthine (brand of propantheline bromide) intramuscularly. A marked diminution in motility occurred and a huge gastric ulcer was easily visible on the lesser curvature at the junction of the upper and middle third of the stomach.

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*Roentgenograms and case history courtesy of I. Richard Schwartz, M.D., Kings County Gastrointestinal Clinic, Brooklyn, N. Y.

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1. Howell, T.H., et al.: Practitioner *173*:172(Aug.)1954.

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'Thorazine' should be administered discriminately; and, before prescribing, the physician should be fully conversant with the available literature.

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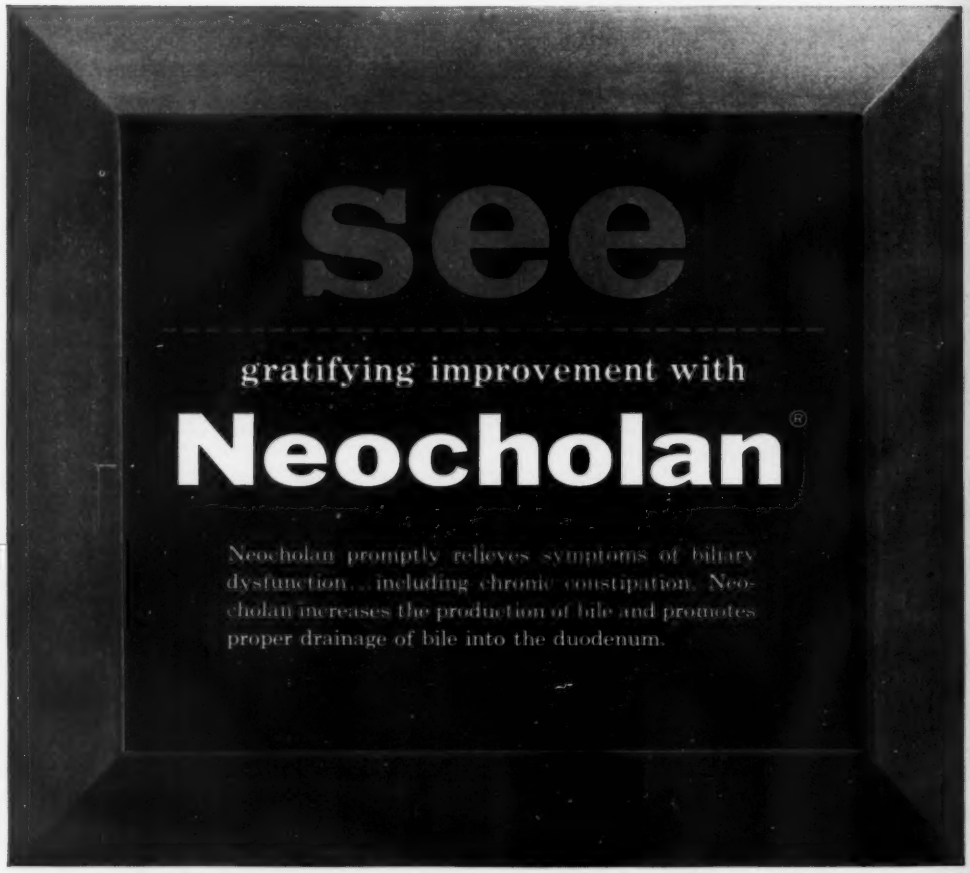
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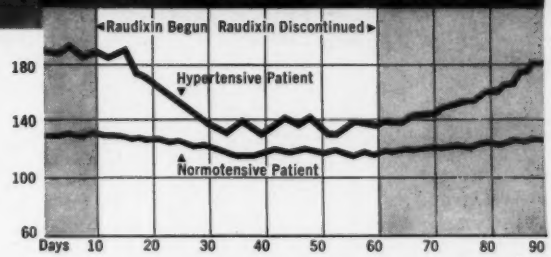

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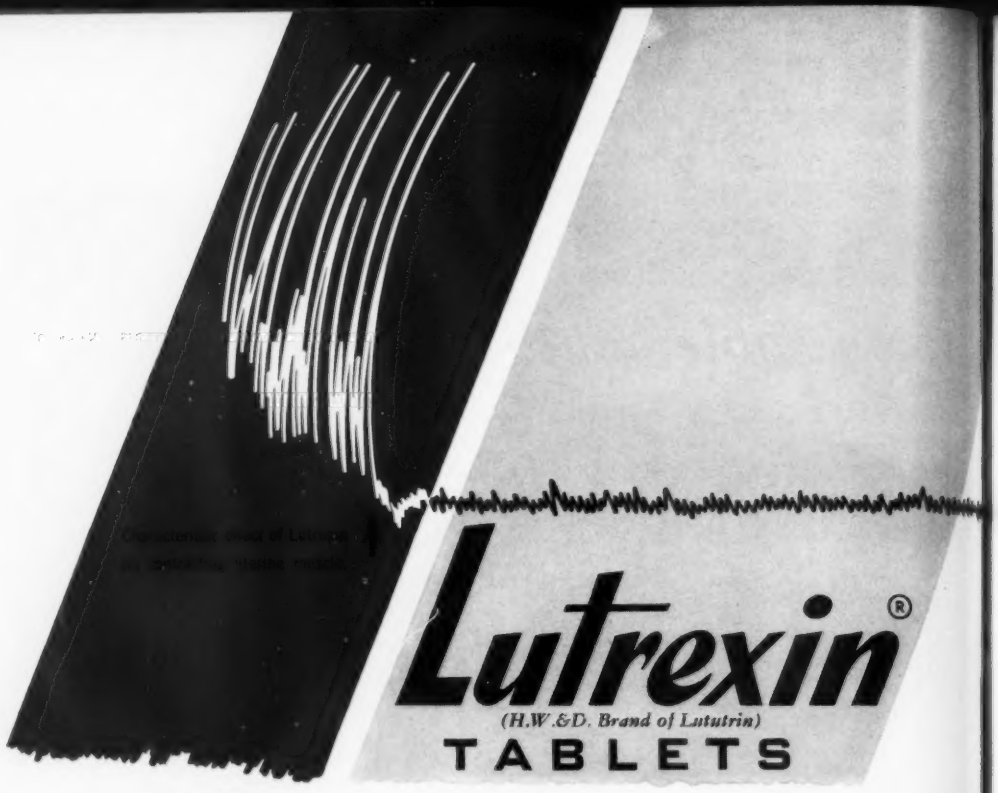

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LUTREXIN specifically relaxes uterine muscle contractions (as in the tracing above) and in many cases, LUTREXIN has been found to relieve the entire symptom complex of dysmenorrhea.

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1. *Rezek, G. H.: Am. J. Obstet. Gynecol., Vol. 66: No. 2, 396-402, 1953.*
2. *Jones, Georgeanna S. and Smith, Frank: Am. J. Obstet. Gynecol., Vol. 67: No. 3 628-633, 1954.*
3. *Jones, Scott S.: Northwest Medicine, Vol. 54: 1253-1254, 1955.*
4. *Majewski, J. T. and Jennings, T.: Obstetrics & Gynecology, Vol. 5: No. 1955.*

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Southern Medical Journal

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April 1956

The Internist's Role in the Treatment of Hyperthyroidism and its Complications*

DANIEL L. SEXTON, M.D.,† *St. Louis, Mo.*

Here is an excellent review of the complications which may occur during the course of thyrotoxicosis or as the result of its treatment whether surgical, medical or by irradiation.

WHEN ONE CONSIDERS the constitutional changes known to occur in long standing untreated hyperthyroidism there is no wonder that carefully directed treatment aided by time is necessary to re-establish body functions following the interruption of the disease. In addition to the cardiovascular involvement discussed later in this paper, definite changes in the liver, the blood, and in body metabolism are recognized. It has been estimated that impaired hepatic function occurs in about 40 per cent of the patients with this disease.

The incidence of diabetes mellitus in patients with long standing thyrotoxicosis is twice that of the general population. The disappearance of glycosuria and hyperglycemia following a change from the hyperthyroid to the euthyroid state has been repeatedly observed.

An effect on the adrenals seems likely although evidence is indirect. Alterations in body electrolytes, in protein and carbohydrate metabolism, and androgen activity may be ascribed in part to altered adrenal cortical function.

Decreased serum cholesterol levels and a decrease in the phospholipid of the serum have been noted. In a study of the urine there is polyuria with an increase in the excretion of nitrogen, phosphorus, and calcium, in addition to potassium, sodium and chlorides. Muscular weakness, best expressed clinically by a weakness in the quadriceps group, can be ascribed to deficient phosphocreatin, reduced nutrients, vitamins and minerals, and an increased demand on muscular activity.

Treatment

Antithyroid Drugs. Since Astwood's[1] original work on the use of thiouracil in hyperthyroidism there have been few exceptions where the hyperthyroid patient with either diffuse or nodular goiter did not respond favorably to antithyroid drug therapy. There is only the occasional mild early case in which remission is lasting.[2] Toxic reactions from antithyroid drugs must be remembered.

Antithyroid drugs are valuable in the preparation of patients with moderate to severe toxicity for operation. Bartels[3] found daily doses of 600 to 1,000 mg. of propylthiouracil safe in short term therapy. Astwood[4] has reported on the treatment of hyperthyroidism in pregnancy with no unfavorable results. A recent report by Aaron[5] of the development of goiter in an infant whose mother had been carried on propylthiouracil would make it seem advisable to add thyroid therapy the last trimester of pregnancy.

It is our practice to employ an antithyroid drug, preferably mercaptoimidazole, in those patients with thyrotoxic heart disease or with general debility prior to the use of I^{131}. We feel that this plan of treatment prevents the aggravation of the hyperthyroid state and eliminates the chances for a thyroid crisis.

*Chairman's Address, Section on Medicine, Southern Medical Association, Forty-Ninth Annual Meeting, Houston, Tex., November 14-17, 1955.

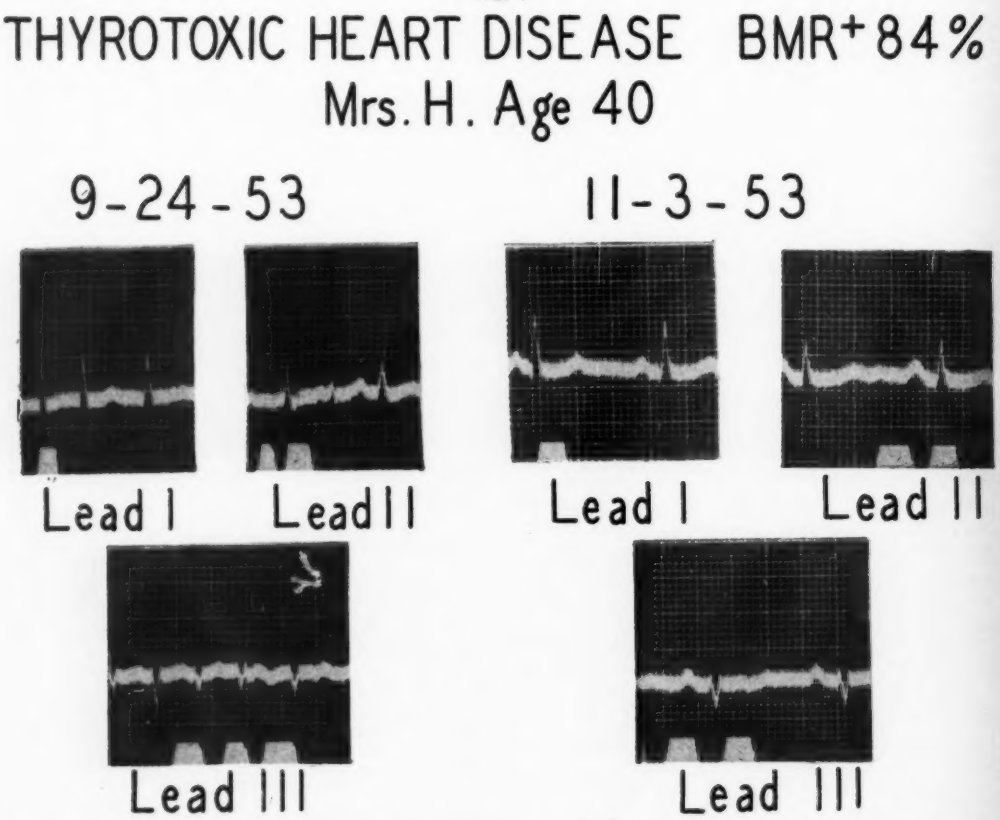
†From the Department of Medicine, St. Louis University School of Medicine, St. Louis, Mo.

Radioactive Iodine (I^{131}). Since Chapman,[6] in 1946, reported the results of treatment of Graves' disease with I^{131}, this plan of treatment has become widespread until today it is rapidly replacing surgery in the treatment of diffuse toxic goiter. Experience over the past ten years has helped greatly to stabilize the dosage. Most clinicians report favorably on the use of I^{131} in the treatment of diffuse toxic goiter in all ages. Although there has been warning that it is carcinogenic, this seems theoretic. Time alone will bear out this fact. Its use in the treatment of nodular goiter has been less extensive. There have been enough instances of nodular thyrotoxicosis, in which operation was contraindicated, to allow for evaluation and it has been found to be almost equally good as that in diffuse goiter.

Patients without complications are treated with I^{131} without preparation. In estimating the dosage of I^{131} it has been our aim to undertreat the patient and, if necessary, to give a second or even third dose. Following the formula of 200 micrograms per gram weight of thyroid, the average dose for a gland weighing between 40 and 60 grams is 8 to 12 millicuries. After three months time more may be given and if necessary a third dose can be administered. We have not found it necessary to give more than three doses. The average amount of carrier free I^{131} required for moderately severe thyrotoxicosis has ranged between 12 and 18 millicuries in our experience.

Attention has been called repeatedly to the fact that iodine uptake by the thyroid is interfered with by the previous use of iodine or iodized preparations. Following I^{131} therapy a period of 12 to 16 weeks is required for an

FIG. 1



Case 1. Auricular fibrillation converted to normal rhythm in 5 weeks by rest, digitalis, mercurial diuretics and 2 M. Imidazole.

evaluation of results in most patients. In making the evaluation one must not be satisfied with suppression of thyrotoxicosis but must determine that hypothyroidism has not occurred. It must be borne in mind that this condition can develop months after treatment.

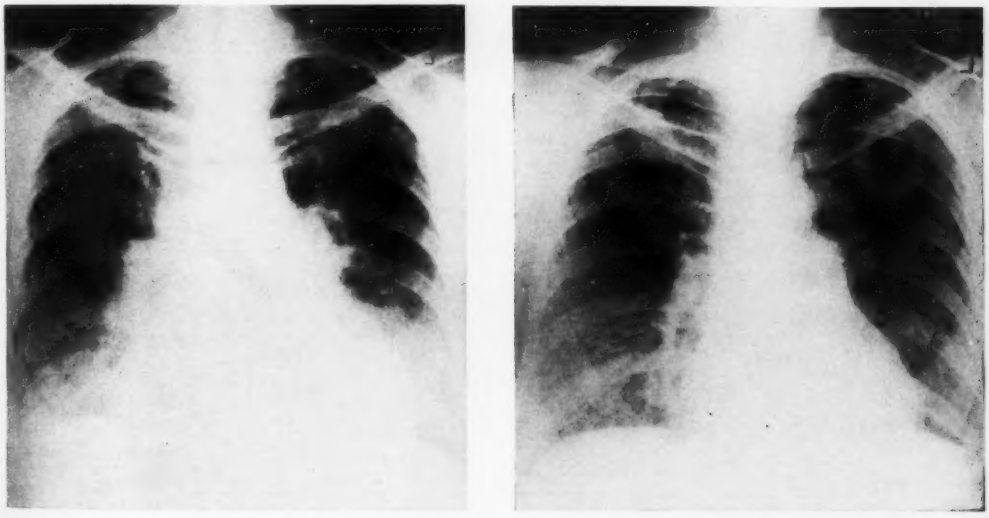
Management of Complications

The cardiovascular system is involved from the beginning in thyrotoxicosis. The term "thyrotoxic heart" is usually applied when auricular fibrillation or congestive failure develops. Fibrillation may be persistent or paroxysmal and it occurs in about 90 per cent of the patients having cardiac failure.

1. *Congestive heart failure* occurs commonly with thyrotoxicosis, particularly in the older age group. Patients dying with thyrotoxicosis and congestive failure who come to autopsy have failed to show any significant structural changes in the heart that can be directly attributed to the hyperthyroid state. However, in many such cases there is no other demonstrable cause for cardiac failure. The excessive utilization by the body of thiamine chloride in thyrotoxicosis may be a contributing factor to the cause of cardiac disease and must be borne in mind in planning treatment. A patient with long standing hyperthyroidism and cardiac involvement is a serious risk patient and it is this type of patient that the internist can treat best medically. It has been shown that I^{131} increases the amount of thyroxin in the circulation and can initiate a thyroid crisis in a debilitated person. By effecting a remission with an antithyroid drug at the same time that other therapeutic measures are being directed toward improving the cardiac state, the patient's risk from I^{131} therapy is reduced to a minimum. The treatment of such a severe case of thyrotoxicosis with thyrotoxic heart disease is not accomplished in weeks but rather in months. The physician must understand this and he must prepare his patient psychologically for such an extended program. The following case reports illustrate the time necessary to obtain the best results when severe cardiac complications exist.

Case 1. Mrs. H., aged 40, complained of swelling of the legs and ankles of 9 months duration. She had had a subtotal thyroidectomy 6 years previously for symptoms indicative of diffuse toxic goiter. Following this first operation she felt well for a period of 6 months when symptoms recurred. Eighteen months after the first operation she had a second operation, following which she again felt better for a time. Her recent treatment consisted of Lugol's solution and x-ray to the thyroid area. Menses ceased three months prior to her first visit.

FIG. 2



A B

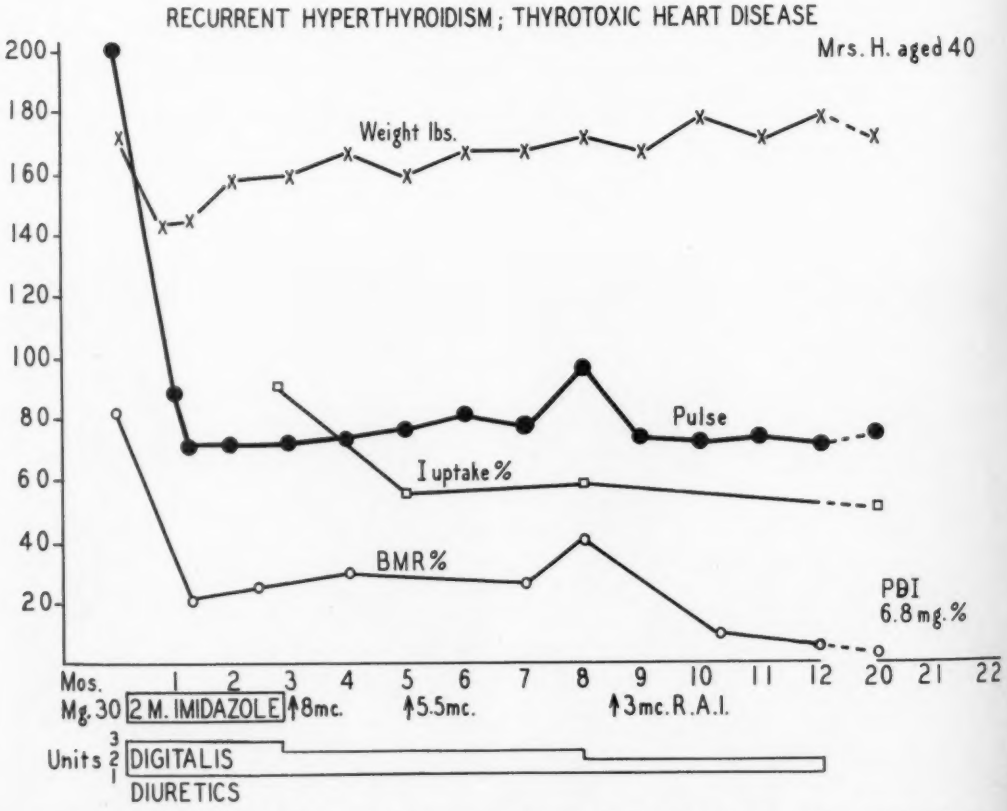
Case 1. Enlarged heart with pulmonary congestion; (A) before, and (B) 20 months after treatment. Heart size remained large permanently.

Examination. Weight was 175 pounds. There was widening of the palpebral slits, with positive lid lag and infrequent blinking. There were bilateral linear scars as well as a collar line scar over the neck. Both lobes of the thyroid were irregularly enlarged with an estimated weight of each lobe being 40 grams. The heart was irregular with an apex beat of 200. The blood pressure measured 145/90. There was fluid in both lung bases, the liver was down 4 to 5 fingers, and there was 4 plus edema of the lower extremities extending to the waist. The electrocardiogram showed a ventricular rate of 200, auricular fibrillation and frequent extrasystoles (Fig. 1).

Course. The patient was hospitalized where the basal metabolic rate measured +85 per cent. Venous pressure measured 270 mm. Hg., and the circulation time from arm to lung was 22 seconds and from arm to tongue 23 seconds. The chest film showed enlargement of the heart and congestion in both bases (Fig. 2). She was given digitalis, 0.45 Gm. daily during her hospital stay of 20 days, mercurial diuretics, thiamine chloride, and 2-mercaptoimidazole, 30 mg. daily. Over the 20 day period she lost 30 pounds in weight, attributed to fluid loss (Fig. 3). Following discharge from the hospital she returned home where she was kept in bed an additional 4 weeks. In the meantime her heart had reverted to normal rhythm with a ventricular rate of 82. The dosage of digitalis was reduced to 0.3 Gm. daily.

The basal metabolic rate 7 weeks after the beginning of 2-mercaptoimidazole was +23 per cent. Direct iodine uptake study following the administration of 0.018 mc. of carrier-free iodine was 90 per cent. At this point 8 millicuries of I^{131} were given. Twelve weeks later an iodine uptake study measured 60 per cent. An additional 5.5 millicuries of I^{131} were given. Three months later an uptake study measured 48 per cent. She was given an additional 4.3 millicuries of I^{131}, which brought the total dosage to 16.5 millicuries. The dosage of digitalis was reduced to one unit daily and omitted entirely 11 months from the date it was begun. At that time the basal metabolic rate measured +7 per cent and protein-bound iodine measured 6.1 micrograms per 100 cc. All evidence of

FIG. 3



Case 1. Recurrent diffuse goiter involving both lobes. Two thyroidectomies, 6 and 4½ years previously. Auricular fibrillation and cardiac decompensation. Weight (water) loss of 30 pounds in 5 weeks on rest, digitalis, and mercurial diuretics. Regular rhythm established in 5 weeks. After 12 months patient fully compensated. After 20 months normal thyroid state and normally functioning heart.

cardiac failure had subsided; the thyroid gland had shrunk to a point where it was not palpable. This patient has been off of all medication for over a year. She is carrying on her normal activities without limitation. Menses now occur regularly.

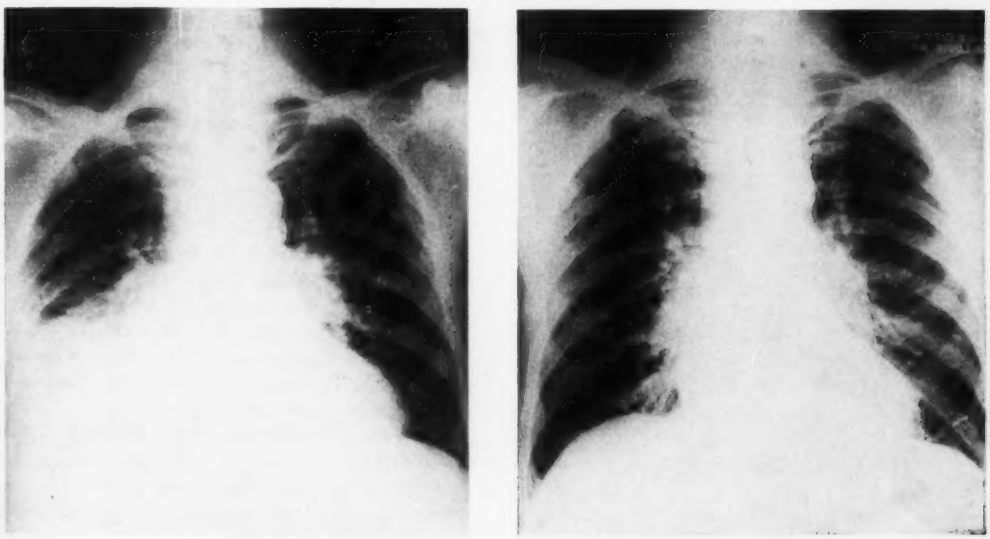
Discussion. It required a full year of treatment and limited activity to restore this patient to a lasting euthyroid state and normal cardiac function. She has made a complete recovery as to her thyroid state. Heart size remains large as shown in figure 2.

Case 2. Wm. C., aged 47, was first seen at City Hospital in August, 1952. He complained of weakness, nervousness, weight loss of 90 pounds over the past 10 months associated with an enormous appetite, swelling of the legs, scrotum and abdomen, shortness of breath, and diarrhea with 5 to 6 movements a day for the past year. He was aware of a goiter for one year. Several months prior to entrance he had been treated by a physician for his goiter but details of treatment were not known.

Examination. There was advanced generalized edema, marked dyspnea, exophthalmus with opthalmometer readings of 20 mm. o.d. and 19 mm. o.s. There was diffuse enlargement of the thyroid gland to moderate degree; the heart was rapid and irregular, the apex rate measuring 145 per minute. The liver was down 4 fingers. Venous pressure measured 285 mm. in the left arm and 350 mm. Hg. when hepatic pressure was applied. Circulation time, arm to tongue, was 18 seconds with Decholin. The basal metabolic rate measured +65 per cent, with an I^{131} uptake of 87 per cent. X-ray film of the chest showed evidence of pulmonary congestion with marked effusion in the right base (Fig. 4). The electrocardiogram showed auricular fibrillation. There was a faint trace of albumin in the urine. Hgb. measured 11.5 Gm. with 3.8 million red cells. Blood serology for syphilis was negative. Fasting blood sugar measured 87 mg. per 100 cc. with a normal sugar tolerance curve. Of the liver function tests performed, the alkaline phosphatase measured 5.1 Bodansky units, cholesterol esters 53.63 mg. per 100 cc.; cephalin flocculation test was 2+ in 48 hours. Total proteins and albumin-globulin ratio were normal, as were the serum bilirubin and the blood amylase. Electrolytes and CO_2 combining power were normal.

Course. Treatment consisted of absolute bed rest, digitalis 0.1 Gm. daily, mercurial diuretics, thiamine chloride, and mercaptoimidazole, 30 mg. daily. Twenty-nine days later the pleural effusion had cleared but fibrillation persisted. Six weeks after entrance he was well compensated. The basal metabolic rate measured +48 per cent. At this point he was given 6 millicuries of I^{131} after the omission of 2-mercaptoimidazole for one week. A small dose was given purposely to minimize any activation of the thyroid state. Two-mercaptoimidazole was reinstituted and the patient was discharged from the hospital 7 weeks following admission. Three months later the basal rate was +25 per cent. He did not cooperate well as an outpatient and it was not until 7 months after the first dose of I^{131} that a second dose of 16 millicuries was given. At this time, nearly 3 years after he was first observed, fibrillation continues. He has gained 25 pounds, there is no edema, the liver margin is not palpable, and he is reasonably

FIG. 4



A B

Case 2. Auricular fibrillation with severe cardiac decompensation; (A) enlarged heart with effusion on right side; (B) 29 days later following rest, digitalis, diuretics and 2 M. Imidazole, effusion cleared. Enlargement of heart and fibrillation persist to date.

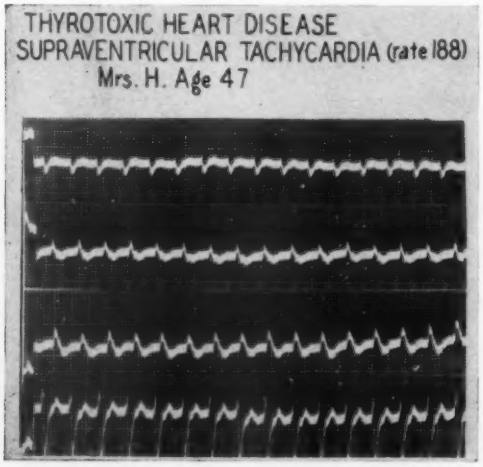
well compensated. The thyroid gland has been reduced only slightly in size.

Discussion. This man represents a severe case of thyrotoxicosis and marked congestive heart failure. In spite of a failing heart he continued to be active and as a result developed cardiac hypertrophy and dilatation with pleural effusion.

This is the type of case in which a thyroid storm could be easily initiated. We believe that in such a case treatment should be directed toward support of the heart and toward the reduction of thyrotoxicosis with an antithyroid drug. Ordinarily we prefer to wait until the patient is in a euthyroid state before administering I^{131}. Due to measures beyond control this patient was treated after six weeks of antithyroid drug therapy. The final outcome of this case might have been different with better cooperation from the patient. This case represents the necessity of preparing the patient psychologically for an extended therapeutic program.

Case 3. Mrs. H., aged 47, was first seen in 1945 with history of goiter of 10 years duration. The thyroid was diffusely enlarged to a moderate degree. Two basal metabolic rates of —14 and —11 per cent expressed the clinical picture. Three years later, following the death of her father, she developed clinical evidence of hyperthyroidism substantiated by a basal metabolic rate of +44 per cent. The patient responded well to propylthiouracil, 300 to 400 mg. daily and was euthyroid after 15 weeks. While symptoms were being controlled with propylthiouracil a large uterine tumor was removed and 4 months later, by necessity, nephrectomy was performed. Following operation the patient was indifferent to treatment and was not seen for an interval of 14 months, at the end of which time she showed marked signs of hyperthyroidism.

FIG. 5



Case 3. ECG at onset of thyroid crisis.

The pulse rate was 112 and regular, with a blood pressure reading of 150/80. The weight of 117 pounds was approximately 30 pounds under her peak weight. An iodine uptake urinary excretion study at this time measured 14 per cent (86 per cent iodine retention), definitely at the hyperthyroid level.

Course. Six millicuries of I^{131} were given. Symptoms of hyperthyroidism were aggravated and she lost an additional 8 pounds. The heart rate was 160 with regular rhythm. Eight weeks later she was given an additional 6 millicuries of I^{131}. One month later auricular fibrillation developed, with edema of the ankles and severe diarrhea. The patient was hospitalized and digitalized with a change in cardiac rhythm from auricular fibrillation to auricular flutter (Fig. 5). A study of the electrolytes revealed findings within normal limits, as was the CO_2 combining power. The fasting blood sugar was normal and the total NPN measured 40 mg. per 100 cc. In spite of rest, intravenous sodium iodide, continued digitalization and other supportive measures this patient developed a thyroid crisis and expired.

Pertinent *postmortem findings* were as follows:

1) Thyroid; primary hyperplasia with late involution and foci of hyperinvolution.
2) Heart
   a) Hypertrophy of the myocardium.
   b) Dilation.
   c) Mucoid degeneration of myocardium.

The heart weighed 450 grams. There were no atheromatous plaques and the valves were normal. Microscopic examination: "The muscle fibers are not increased in size or shape in most areas. The cross striations and discs are well preserved and the nuclei are elongated and deeply basophilic. In many areas the sarcolemmal sheaths appear as tubes, about two-thirds filled with sarcoplasm. There are a few tiny areas in some of the muscle fibers which have a loose reticular pattern. Small areas of fibrosis are noted." Liver: Weight 1,280 grams. No unusual macroscopic or microscopic findings were noted.

Discussion. This patient had a goiter of long standing with previously induced remissions with iodine and propylthiouracil. She had undergone two major operative procedures while her hyperthyroid state was suppressed with propylthiouracil and withstood them well. The strain on the cardiovascular system expressed itself in the last three months of life. Because this patient had not cooperated on the occasions when she was brought into remission it was thought advisable to use I^{131}. At this period of experience with I^{131}, thyroid storm following ingestion of I^{131} had not been reported. A review of this case suggests that all cardiovascular symptoms were aggravated from the time I^{131} was given.

Following this experience and the report of Skillern and associates[7] we have adopted the practice of treating patients with thyrotoxicosis and advanced cardiac involvement with an antithyroid drug until a euthyroid state is well established, following which I^{131} is administered.

2. *Postoperative Tetany.* Mild and acute stages of this entity are usually cared for by the surgeon and subside while the patient is still in the hospital or shortly after dismissal. Since this condition is the result of removal or damage, with subsequent degeneration, of the parathyroid glands it is a good practice to measure the serum calcium on all patients who have had radical thyroid surgery or even a subtotal thyroidectomy 30 to 60 days following operation. In so doing, chronic tetany can be detected early and serious complications may be avoided. The diagnosis is usually not difficult in those patients who have had thyroid surgery and present symptoms of neuromuscular hypersensitivity.

Symptoms may vary from stiffness or paresthesia of the extremities to epileptiform seizures with laryngeal spasm and serious respiratory embarrassment. At times these symptoms may go unnoticed and the condition is detected only when the patient presents himself for visual disturbances secondary to cataract formation. The object of treatment is to establish and maintain as nearly as possible a normal level of blood calcium. In acute tetany with laryngeal spasms the blood calcium should be elevated as promptly as possible by the intravenous injection of a calcium salt, preferably calcium gluconate. Parathyroid hormone, 300 USP units, 2 to 3 times during the first 24 hours, may be added. After a few days this plan of treatment can be replaced by activated sterols. Dihydrotachysterol (AT 10) is the most effective sterol available. One capsule containing 1.25 mg. given 4 to 5 times daily controls symptoms and elevates the serum calcium to normal in most cases. Later on a maintenance dose of 1.25 to 3.75 mg. suffices, or it may be possible to change to calciferol, 50,000 to 100,000 units 2 to 3 times daily. A high calcium, low phosphorous diet should be followed for a time, and probably indefinitely. It may also be necessary to add calcium gluconate orally. The Sulkowitch reagent is a valuable aid in following calcium excretion in a patient under treatment, with an occasional check on the calcium, phosphorous, blood proteins being done. The following case report is illustrative of chronic tetany.

Case 4. A. B., aged 39, had an operation on her thyroid in 1931 with considerable symptomatic relief. She was operated upon again in 1948 for recurrent goiter, again being relieved of nervous symptoms. About a year later she developed a sensation of choking and enlargement of the thyroid and presented herself to the surgical clinic.

She was found to have slight enlargement of both lobes of the thyroid and there was a 1 cm. sized nodule palpable in the right upper lobe. The basal metabolic rate measured —10 per cent and an iodine urinary excretion study measured 61 per cent, well within the normal range. Because of the nodule in the right upper lobe, total thyroidectomy was attempted but unsuccessfully, as indicated by a subsequent basal metabolic rate of —8 per cent. Section of the gland showed multiple nodules ranging in size from 0.5 to 1.5 cm. in diameter. The acini were filled with colloid.

This patient subsequently developed tingling of the fingers and muscle cramps. Several serum calcium levels ranged from 3.4 to 3.9 mEq. per liter with serum phosphorous levels ranging from 1.4 to 3 mEq. per liter. Alkaline phosphatase was 1.5 Bodansky units; cholesterol was 450 mg. per 100 cc. Total proteins were reported as 6.42 Gm. per 100 cc., albumin 3.75, globulin 2.67.

This patient has been under treatment, requiring five AT 10 capsules (6.25 mg. daily together with thyroid gr. ss. daily, calcium gluconate orally, and a planned high calcium low phosphorous diet has been her regimen. To date there has been no formation of cataracts. An attempt to reduce the dose of AT 10 results in a return of symptoms and absence of urinary calcium as shown by the Sulkowitch test.

Discussion. The incidence of postoperative tetany is difficult to accurately estimate. It has been said to be as high as 0.5 per cent in large thyroid clinics. Where radical thyroid surgery is performed this incidence does not seem too high. I believe it would be high, however, in the over-all field of thyroid surgery. Prophylactic removal of thyroid nodules for suspected malignancy of the gland can be expected to increase the incidence of tetany. Chronic tetany is an illness that requires lifelong treatment and should always be kept in mind when considering multiple thyroid operations.

3. *Progressive Exophthalmus.* Eye changes of a benign nature in thyrotoxicosis need no elucidation. The degree of widening of the palpebral fissure and exophthalmus vary with the degree of emotional stress. Even in long standing severe thyrotoxicosis exophthalmus of a benign type causes no great

trouble. In progressive or so-called malignant exophthalmus the story is different. This condition occurs more often following the sudden transition from a profound hyperthyroid state to one of euthyroidism or hypothyroidism. While the change is more sudden following operation, progressive exophthalmus has been observed following the use of antithyroid drugs and I^{131} in the treatment of hyperthyroidism. Williams[8] calls attention to the palpebral swelling and the infra-orbital fat deposits as a clue to those that might develop this condition.

When these findings occur in a patient with hyperthyroidism a plan of treatment directed toward the slow reduction of the hyperthyroid state is considered advisable. This can be accomplished by partial reduction of the hyperthyroid state with graded doses of I^{131}. However it does not insure against the development of progressive exophthalmus. The addition of substitution thyroid therapy given in an effort to reduce the increased amount of thyroid stimulating hormone known to exist in such cases is theoretical. Its effectiveness is questionable. X-ray treatment to the hypophyseal area is another procedure which may be employed. Bierwaltes[9] reported on 28 such patients treated with a significant response in 13 of them. If the exophthalmus is rapid, either the Naffziger[10] operation or some other form of ocular decompression must be attempted to avoid subsequent ocular infection and loss of eyesight. The following case report illustrates the seriousness of this condition and the need for heroic action.

Case 5. A. G., aged 43, was seen in consultation at Evangelical Deaconess Hospital, St. Louis. He had been treated over a period of 7 months for hyperthyroidism with propylthiouracil, the drug having been discontinued about 3 weeks prior to entrance. There was a diffuse goiter of moderate size. The basal metabolic rate was +35 per cent. There was bilateral exophthalmus with marked infection and edema of the right eye and surrounding tissue. The left eye was involved to a lesser degree. Local ocular treatment was used and desiccated thyroid was prescribed. Because of progression of the exophthalmus in both eyes, a Naffziger decompression operation was performed six days after admission. For a few days the eyes regressed and then began to protrude again. Twelve days after the decompression operation a trans-antero-ethmoidectomy was performed in a final effort to replace the eyes in the orbits and overcome infection. The final result in this case was corneal destruction with total blindness (Fig. 6).

FIG. 6

Case 5. Progressive exophthalmus following propylthiouracil therapy, corneal ulceration and eventual blindness.

4. *Postoperative Myxedema.* This subject needs little discussion before this group, other than to recall a few highlights related to its occurrence. The incidence of postoperative myxedema is higher in the more radical surgical procedures such as in attempted total thyroidectomy or when a second thyroid operation is performed. It is found more often if subtotal thyroidectomy is performed for diffuse toxic than for nodular toxic goiters. It has also been observed to occur more frequently in patients with thiouracil induced hypothyroidism at the time of operation. The majority of patients who develop hypothyroidism do so in the first 60 to 90 days following operation. It can develop later and must be kept in mind in the examination of all patients who have had operations on the thyroid gland. It may develop as a transient disturbance and last for several months or several years. In such instances the gland regenerates functioning tissue and overcomes the deficiency.

Not all patients with postoperative hypothyroidism or myxedema present the expected clinical signs. Likewise laboratory aids may not indicate the existence of this condition. In such instances a therapeutic trial with thyroid therapy may be necessary to establish the diagnosis. The majority of instances of postoperative hypothyroidism and myxedema are permanent and require lifelong substitution therapy. The patient usually finds out for himself the necessity for adequate dosage and uninterrupted treatment.

Summary

Hyperthyroidism is a constitutional illness affecting many systems. The extent of systemic involvement and altered body function must be known if a complete therapeutic plan is to be intelligently carried out. In severe thyrotoxicosis with profound cardiac involvement months are required to restore the patient's health to normal, should complete recovery ensue. Chronic tetany is an infrequent but serious complication of thyroid surgery. Progressive exophthalmus is a rare but very serious entity that is not completely understood. Hypothyroidism must be thought of in all patients with vague complaints who have been treated either surgically or with I^{131}.

Bibliography

1. Astwood, E. B.: The Chemical Nature of Compounds Which Inhibit the Function of the Thyroid Gland, J. Pharm. & Exper. Therap. 78:79, 1943.
2. Sexton, D. L.: Thiouracil: Clinical Evaluation Following Two and One-half Years' Experience, South. M. J. 39:891, 1946.
3. Bartels, E. C., and Kohn, M. M.: Large Doses of Propylthiouracil in the Treatment of Hyperthyroidism, J. Clin. Endocrinol. 14:1403, 1954.
4. Astwood, E. B.: The Use of Antithyroid Drugs During Pregnancy, J. Clin. Endocrinol. 11:1045, 1951.
5. Aaron, H. H., Schneierson, S. J., and Siegel, E.: Goiter in Newborn Infant Due to Mother's Ingestion of Propylthiouracil, J.A.M.A. 159:848, 1955.
6. Chapman, E. M.: Treatment of Graves' Disease with Radioactive Iodine, Tr. Am. Goiter A. 74, 1942-1946.
7. Skillern, P. G., McCullagh, E. P., and Hays, R. O.: Cases of Graves' Disease Resistant to Radioactive Iodine, Tr. Am. Goiter A. 184, 1951.
8. Williams, R. H.: Textbook of Endocrinology, ed. 2, Philadelphia. W. B. Saunders Co., 1955.
9. Bierwaltes, W. H.: X-ray Treatment of Malignant Exophthalmus: a Report of 28 Patients, J. Clin. Endocrinol. 13:1090, 1953.
10. Naffziger, H. C.: Progressive Exophthalmus Following Thyroidectomy; Its Pathology and Treatment, Ann. Surg. 94:582, 1931.

Hyperparathyroid Disease In Urology*

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The authors have had a remarkable experience in uncovering hyperparathyroidism by the adequate study of calcium-phosphorus ratios in instances of nephrocalcinosis and nephrolithiasis.

IT IS STRANGE INDEED that urologists should be concerned with the hyperfunction of an endocrine gland in the neck that to most writers is more related to demineralization of bone and osteitis fibrosa cystica. This concern is all the more perplexing when one realizes that hyperparathyroidism is responsible for stone formation in one per cent of patients having urinary calculus. The cause of the current interest becomes obvious when one realizes that this small number of patients with calculus is, (1) the only group in which the basic metabolic cause for calculi is known, and (2) the only group in which the metabolic process can actually be controlled by therapy.

History

Since Sandstrom[1] discovered these minute glands in the neck, a tremendous amount of research has been done on the calcium transport mechanism of the body. Mandl,[2] in 1926, removed the first parathyroid body for hyperfunction of that gland. Albright and Reifenstein[3] made a great contribution to the literature, in 1948, when they discussed the parathyroid in relation to metabolic bone disease. Rienhoff[4] reviewed the subject of the surgical treatment of hyperparathyroidism in 1950, and was able to locate 579 reported cases in the literature. He suggested that many more patients have been diagnosed and subjected to removal of the parathyroid adenoma but have not been reported, and that many other patients have probably not been properly diagnosed. Most writers have been chiefly concerned with the changes of demineralization of bone and osteitis fibrosa cystica. However, when it was suggested that the diagnosis should be suspected in recurrent renal calculi, the routine use of the serum calcium and

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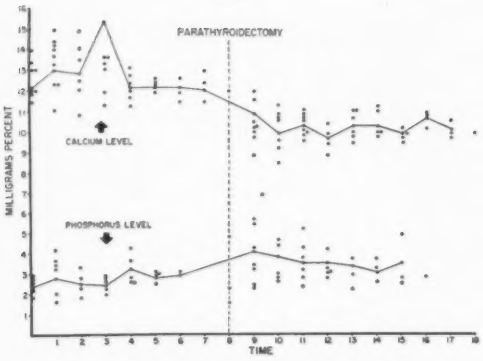
FIG. 1



Graph of the mean average of all serum calcium and phosphorus determinations on the nine cases presented.

phosphorus ratio in many of our larger clinics increased the number of hyperparathyroid patients. Many of the earlier hyperparathyroid cases were found in individuals being investigated for weakness, fatigue, lassitude and multiple fractures. It is interesting to note that nine instances of proved hyperparathyroidism have been found at the Veterans Administration Medical Teaching Group Hospital since 1946, only because the application of the serum calcium-phosphorus ratio studies were routinely employed on patients having a calculus. None of the patients had osteitis fibrosa cystica and only one demonstrated slight evidence of bony demineralization.

Diagnosis

As many authors have suggested, if all hyperfunctioning parathyroid glands are to be found they must not only be suspected, but a routine serum calcium and phosphorus determination should be done especially on those patients with radiopaque calculi. When recurrence or multiple calculi are encountered, three or more determinations should be done. Although many of the determinations in the cases presented fell below 11.6 mg. per 100 cc., the mean average was consistently above 12 mg. (Fig. 1). Therefore, if the calcium level rises above 11 mg. per 100 cc. and the phosphorus level descends to 3 mg. or lower, further examinations should be done. A 24 hour urine sample should be collected and if the calcium level is below 200 mg. further urinary calcium determinations, while the patient is on a restricted diet, are unnecessary. If, however, there is hypercalcinuria the individual should be placed on a neutral ash, low calcium diet for 5 days, and a 24 hour urine calcium determination should be repeated. If the repeated test shows a calcium level above 200 mg., if there is no renal insufficiency, and if the total proteins are within normal limits, then corollary evidence of parathyroid disease should be sought. Radiographs of the hands should be done to gather evidence of osteitis fibrosa cystica. If these are positive a bone survey should be done to include the skull and the teeth for demineralization of the skull and the absence of the lamina dura of the teeth. Before undertaking parathyroid exploration, barium-esophageal studies should be made to rule out mediastinal parathyroid adenoma, since it has been brought out by Rienhoff[4] that the parathyroids can be found not only in the neck but in the mediastinum as far down as the diaphragm.

Case Reports

Case 1. E. E. (No. 26878), a 38 year old white man, was admitted on March 16, 1949 to the Urological Section, with a history of recurrent renal calculi be-

FIG. 2

Case 2. Preoperative x-ray film of kidneys, ureters and bladder.

ginning in November, 1947. Calculi were removed surgically on two occasions.

Studies for hyperparathyroidism revealed serum calcium levels as high as 15 mg. per 100 cc. and serum phosphorus levels as low as 2.4 mg. per 100 cc. Urinary calcium excretion was over 200 mg./24 hours on a weighed calcium diet. The neck was explored on May 20, 1949, and a parathyroid adenoma measuring 0.8 cm. in diameter was removed. X-ray films revealed no evidence of abnormal bone changes preoperatively. Postoperatively, the blood calcium and phosphorus levels returned to normal.

Case 2. J. W. S. (No. 69021), a 33 year old white man, was admitted on September 21, 1951 with chills, fever and pain in the right flank region. His past history revealed recurrent renal calculi on the right with operations for their removal in 1942, 1943 and 1945.

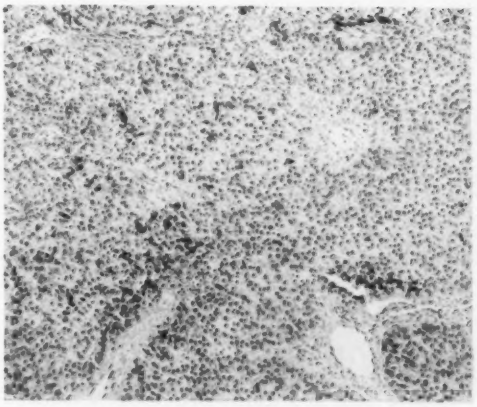
Physical examination was essentially negative. Excretory urogram revealed parenchymal calcification in the left kidney and a non-functioning right kidney with four stones lying in the pelvis (Fig. 2). The right kidney was removed on September 20, 1951 with uneventful recovery. Pathologic report revealed chronic pyelonephritis and nephrosclerosis.

Studies for parathyroid disease revealed a serum calcium of 13.3 mg. per 100 cc. and serum phosphorus of 1.6 mg. per 100 cc. Urinary calcium excretion studies on a weighed calcium diet were over 200 mg. per 24 hours. X-ray examination of the bones revealed no evidence of osteoporosis. The lamina dura was intact. On November 16, 1951, a parathyroid adenoma (Figs. 3 and 4) was removed from the space between the trachea and esophagus on the left side. Postoperatively, the patient developed tetany which was treated with intravenous and oral calcium and responded promptly. Serum calcium and phosphorus returned to normal levels postoperatively. He was rechecked on March 31, 1951 and found to be asymptomatic with normal blood chemical findings. However, the parenchymal calcification persisted on the left side (Fig. 5).

FIG. 3

Case 2. Parathyroid adenoma.

FIG. 4



Case 2. Photomicrograph of adenoma.

Case 3. H. F. T. (No. 12698), a 29 year old white man, was admitted in October, 1947. His history revealed recurrent urinary stones since November, 1942. A total of 10 stones was removed surgically and the patient passed four or five stones spontaneously.

X-ray study revealed multiple renal and ureteral calculi. Serum calcium studies showed over 13 mg.

FIG. 5

Case 2. Postoperative x-ray study of kidneys, ureters and bladder.

and phosphorus levels below 3 mg. per 100 cc. Twenty-four hour urine excretion on a weighed calcium diet was as high as 900 mg. per 24 hours. X-ray films of the skull and long bones revealed evidence of demineralization. A parathyroid adenoma measuring 1.5 by 1 by 0.3 cm. was removed on December 16, 1948 from its location near the esophagus at the level of the upper pole of the thyroid. His postoperative course was uneventful.

Case 4. L. A. C. (No. 100506), a 32 year old white man, was admitted on October 22, 1949 with a history of recurrent renal stones since November, 1947.

Physical examination was negative except for a 5 by 3 cm. nodule in the right side of the neck. Serum calcium levels were found to be 13 mg. per 100 cc. or above and phosphorus levels below 3 mg. Urinary calcium excretion on a weighed calcium diet was as high as 400 mg. in 24 hours. On November 25, 1949, an adenoma was found in the wall of a cyst of the right lobe of the thyroid. Pathologic diagnosis was parathyroid adenoma. The postoperative course was uneventful and the serum calcium and phosphorus levels returned to normal. Subsequent examinations revealed no new stones but the patient passed several stones that were present prior to the parathyroidectomy.

Case 5. B. C. (No. 114907), a 33 year old white man, was admitted on December 9, 1946 with pain in the left flank region, tenderness and fever. The past history revealed that he passed his first stone in 1941 and was subsequently discharged from the Army because of renal stones. Nephrolithotomy was performed in 1944.

Plain KUB x-ray film revealed bilateral renal calculi with parenchymal calcification. Serum calcium levels were as high as 15 mg. per 100 cc. and the phosphorus levels were between 2.9 and 4.5 mg. per 100 cc. Twenty-four hour urinary excretion tests were not performed; however, the Sulkowitz test was reported as 2+ and 3+. On February 10, 1947, a parathyroid adenoma measuring 2.5 cm. in diameter was removed from below the right pole of the thyroid. The left lobe of the thyroid felt firm at operation and a tumor removed therefrom.

Pathologic diagnoses: (1) parathyroid adenoma, and (2) papillary cystadenoma of thyroid. Postoperatively, the patient did very well and his blood chemical values and urinary calcium excretion returned to normal. Yearly examinations show a decrease in the amount of parenchymal calcifications.

Case 6. G. W. C. (No. 112643), a 35 year old white man, was admitted in March, 1952, because of fatigue, malaise and a past history of having passed two urinary calculi.

Excretory urogram revealed the presence of a calculus in the right renal pelvis. Hyperparathyroidism was suspected since the serum calcium level was over 12 mg. per 100 cc. on several determinations and the serum phosphorus levels were below 3 mg. On a weighed calcium diet the 24 hour urinary excretion of calcium was between 200 and 480 mg. in 24 hours. On November 7, 1952, a parathyroid gland measuring 0.2 by 0.3 by 0.6 cm. was removed and the pathologist reported it as a hyperplastic gland.

Postoperative serum and urinary studies for calcium were equivocal and on October 1, 1954, the neck and mediastinum were re-explored and no adenoma found. On November 17, 1954, a right pyelolithotomy was performed with uneventful recovery. Re-examination in May, 1955, revealed normal serum calcium-phosphorus ratio and no evidence of urinary calculi.

Case 7. B. E. D. (No. 96281), a 35 year old white man, was admitted on January 1, 1950 with suprapubic pain. In 1944, the patient complained of fatigue and was treated with intravenous calcium.

The excretory urogram upon admission revealed four stones in the right lower ureter and bilateral parenchymal calcification. Ureteral stones were successfully removed by manipulation with ureteral catheters. Studies revealed a serum calcium level of well over 13 mg. per 100 cc. and a phosphorus level below 2 mg. Urinary calcium excretion on a weighed calcium diet was as high as 300 mg. in 24 hours.

February 3, 1950, a parathyroid adenoma the size of the tip of one's little finger was removed from the region of the junction of the upper and middle third of the right lobe of the thyroid. Postoperatively, the serum and urine studies for calcium metabolism returned to normal. Transitory tetany immediately postoperatively was treated successfully with intravenous and oral calcium. Since the removal of the adenoma, the patient has passed five stones spontaneously and two more were removed by ureterolithotomy. When seen in 1954, he had not passed any stones recently and his blood chemical values were normal.

Case 8. P. W. B. (No. 58142), a 33 year old white man, was admitted on January 24, 1947 with malaise, fever and pain in the left flank region.

Examination revealed multiple small stones filling the entire left renal pelvis and calyces. Serum calcium determinations were over 12 mg. per 100 cc. and the phosphorus was around 3 mg. The Sulkowitz test on the urine was reported as 4+. On March 26, 1947, the neck was explored and no adenoma was found. Left nephrolithotomy was done on July 10, 1947.

The patient returned in March, 1948, and serum calcium-phosphorus ratios were still indicative of parathyroid disease. On May 4, 1948, the neck was re-explored and a parathyroid adenoma measuring 1 cm. was removed from the region of the left upper pole of the thyroid. Postoperatively, he had transitory tetany which was successfully treated with calcium. Examinations during the next three years showed the patient to be asymptomatic with normal blood chemical values and with calcification remaining in the left kidney.

Case 9. H. B. McM. (No. 111970), a 24 year old white man, was admitted on December 11, 1950 with pain in the left flank region. In 1948, he had a diagnosis of "pus on the kidneys," and in July, 1949, three stones were found in the right kidney and one in the left kidney. He had left ureterolithotomy in November, 1950.

On admission, an excretory urogram revealed two calculi in the right kidney and one in the left ureter. X-ray films of the bones and barium swallow were negative. Serum calcium was over 12 mg. per 100 cc. and serum phosphorus was 3 mg. Twenty-four hour urinary calcium excretion on a weighed calcium diet

ranged between 692 and 780 mg. in 24 hours. On January 12, 1951, a 1 by 0.5 cm. parathyroid adenoma was removed from the right side of the neck below the inferior thyroid vessels.

Postoperatively, the blood chemical values and calcium excretion studies returned to normal. He was readmitted February 27, 1951 with pain in the right flank region and x-ray study revealed one large calculus and numerous small ones on the right side. Pyelolithotomy was done on the right side on May 3, 1951. Urine culture at that time showed pseudomonas organisms. In December, 1951, a stone was manipulated from the right ureter by a loop. On July 31, 1952, blood or serum chemistries were normal, but subacute prostatitis and urethral stricture, probably traumatic, were noted.

On November 4, 1952, he returned with ureteral colic on the right side and a ureterolithotomy was done. At that time, a small stone in the lower calyx of the right kidney, in addition to the ureteral one, was noted.

On January 9, 1953, he was readmitted and ureterolithotomy was done on the right side. In June, 1953, he stated that he had passed two or three small stones. Blood chemical values remained normal and a urogram revealed no evidence of stone.

Ureterolithotomy on the left side was done August 31, 1953. Urinary tract infection and urethral stricture persisted until May, 1954, when he again passed a small stone. In August, 1954, he passed another stone from the left side and at this time the urine culture revealed paracolon bacillus "29911" which was resistant to all known antibiotics. He passed another stone in May, 1955.

Discussion of Cases

During the 9 year period, July 1946 to July 1955, 1,335 patients with proved urinary calculi were handled on the Urological Section. Of that number, 9 patients were found to have proved hyperparathyroidism. These were found by the routine utilization of serum calcium-phosphorus ratios on each patient. This gives an incidence of 0.67 per cent of hyperparathyroidism in urinary calculi which agrees substantially with the incidence of 1 per cent quoted by Flocks.[5]

All cases of hyperparathyroidism operated on at Veterans Administration Medical Teaching Group Hospital between 1946 and 1955 were originally on the Urological Section with urinary calculi. The majority of Rienhoff's[4] cases were found in this manner, as were Royster's.[6] None of the cases demonstrated osteitis fibrosa cystica, but two complained of weakness, fatigue and lassitude (Cases 6 and 7).

This is mentioned only to remind urologists that they are the first who may be in position to discover hyperparathyroidism if they are constantly aware of its possibility. It is our general impression that the majority of competent observers believe that the incidence of hyperparathyroidism is higher in nephrocalcinosis than in ureteral calculi. This small series would tend to discredit that supposition. Staghorn calculi, solitary renal calculi, nephrocalcinosis and solitary small ureteral calculi were all represented in these 9 cases. A superficial review of case reports in the literature would indicate that there is no typical type of metastatic calcification in hyperparathyroidism. Therefore, one must remain suspicious of all "calculus-patients" if he is to successfully diagnose one case of hyperparathyroidism in 100 cases of calculi.

The last point to be made is obvious to most urologists, but does not seem to be sufficiently emphasized in the current literature. The last patient (Case 9) experienced recurring stone formation in spite of successful removal of an adenoma because of persistent chronic urinary infection (paracolon bacillus, resistant to all known antibiotics) and a traumatic urethral stricture. Thus, if obstruction is not relieved and infection not eradicated, the patient will continue to form stones even though he was originally in that fortunate small group (1 per cent) where the basic metabolic cause could be controlled. In two cases (5 and 7), there was visible decrease in renal calcification after parathyroidadenectomy without renal surgery. However, none of the calculi located in the renal pelvis was noted to have decreased in size.

Summary

Hyperparathyroidism is of particular interest in urology because it is a known basic metabolic cause for calculi and it is possible by surgical measures to favorably alter the progress of this metabolic disturbance.

Nine cases of hyperparathyroidism were admitted to the Urological Section for urinary calculi and hyperparathyroid disease was discovered in the course of the studies. None had evidence of osteitis fibrosa cystica and only one had questionable evidence of bony demineralization.

The diagnosis is established only by awareness of the presence of the disease which can be proved by laboratory studies, namely, abnormal serum calcium-phosphorus ratios in

patients with normal total proteins and increased 24 hour urinary calcium excretion. Supplementary evidence may be obtained from x-ray studies of the hands, skull, long bones and teeth.

An incidence of 0.67 per cent of hyperparathyroidism has been observed in 1,335 patients who demonstrated urinary calculi. It is interesting to note that this incidence parallels the 1 per cent rate noted in the literature.

All types of metastatic urinary calcification are represented in the 9 cases. The course of events in the last case (Case 9) suggests the possibility that if stasis and infection are not eliminated, one cannot expect a cessation of the stone forming tendency. The hormonal dysfunction was corrected by parathyroid-adenectomy, but the obstruction and accompanying infection continued to support stone formation.

Bibliography

1. Sandstrom, I.: Om en ny Kortel hos menniskan och atskilliga daggdjur, quoted by William F. Rienhoff, Upsala läkaref. förh. 15:441, 1880.
2. Mandl, F.: Therapeutischer Versuch bei einem Falle von Osteitis fibrosa generalisata mittel Exstirpation eines Epithelkoerperchentumors, quoted by William F. Rienhoff, Zentralb. Chir. 53:260, 1926.
3. Albright, Fuller, and Reifenstein, Edward C., Jr.: The Parathyroid Glands and Metabolic Bone Disease. Baltimore, The Williams & Wilkins Co., 1948.
4. Rienhoff, William F., Jr.: The Surgical Treatment of Hyperparathyroidism, Ann. Surg. 131:917, 1950.
5. Flocks, Ruben: Panel Discussion on Urolithiasis, Urol. Survey 4:11, 1954.
6. Royster, H. P.: Discussion of Rienhoff's paper, Ann. Surg. 131:943, 1950.

Vascular Lesions of Thrombotic Thrombocytopenia (Moschcowitz's Disease) Following Bilateral Nephrectomy of the Dog*

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Occlusive lesions in blood vessels which simulate those of thrombotic thrombocytopenia in man have been produced in experimental work in dogs. This offers further evidence for the pathogenesis of the vascular lesions.

MOSCHCOWITZ,[17] IN 1925, reported an unusual case in a discussion entitled, "An Acute Febrile Pleiochromic Anemia with Hyaline Thrombosis of the Terminal Arterioles and Capillaries, an Undescribed Disease." Since that time the malady of Moschcowitz has been most commonly referred to as "thrombotic thrombocytopenia."[28]

In recent years there have been several reviews of the clinicopathologic features of this disturbance.[1, 4, 8, 9, 13, 14, 29] The main clinical features consist of a hemolytic anemia, thrombocytopenic purpura and unusual neurologic manifestations. The main morphologic finding is that of occlusive masses within small blood vessels of various viscera.

Although the thrombotic masses play a major role in the pathogenesis of the multiple system involvement, their origin and composition remain obscure. Moschcowitz originally considered the "hyaline thrombi" to be derived from agglutinated erythrocytes. Later Baehr, Klemperer and Schifrin[3] suggested a platelet origin for these masses, a point of view which has been supported by others.[6] Gore,[11] however, considered the disturbance as primarily vascular, and the occlusive masses were

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considered to be derived from the damaged and altered vessel wall by extrusion into the lumen. The earliest lesions were interpreted as an involvement of the cement substance which maintains normal vascular permeability. Platelets were interpreted as being secondarily superimposed on these vascular masses. Orbison[26] described an aneurysmal dilatation of the vessel in the area of the occlusive mass. The main site of involvement was demonstrated by serial sections to be within arterioles. The arteriolar walls revealed focal amorphous eosinophilic lesions which replaced the normal components of the wall and were continuous with the intraluminal masses. Thus, Orbison supported the concept of a primary arterial lesion in this disease.

Fisher and Creed[7] considered the characteristics of the occlusive masses as those of "fibrinoid." Gore's contention was supported and the disturbance was considered primarily one of the walls of vessels, the occlusive material in the lumen was interpreted as a herniation from the wall. Deposits of platelets and fibrin appeared secondary in nature. A similarity to so-called "collagen diseases" was emphasized.

Bilateral nephrectomy of the dog is followed by lesions of the small arteries and arterioles, especially within the viscera.[18] These lesions are characterized by necrosis of the smooth muscle of the media, hyalinization of the media with and without the admixture of connective tissue elements.[15, 19, 20] An earlier consideration of these lesions from this laboratory described the protrusion of the necrotic media into the vascular lumen.[18] This seemed to occur particularly in instances where the inner portion of the media was necrotic while the outer portion appeared intact. Granular or hyaline eosinophilic masses were also observed within capillaries and it was suggested that these masses were derived from the protruded necrotic media which had broken off and had been swept along to become impacted in capillaries. Such lesions were also encountered by Orbison, Christian and Peters.[27] These authors commented on the similarity of the occlusive masses following renal ablation to the lesions of "thrombotic thrombocytopenia" observed in man.

Since these early observations we have encountered several examples of vascular lesions following bilateral nephrectomy of the dog which resemble those of the malady of Moschcowitz, "thrombotic thrombocytopenia." In this presentation one such example will be considered in detail. To our knowledge this represents the only experimental reproduction of a lesion which appears very similar to that of "thrombotic thrombocytopenia."

Materials and Methods

A dog weighing 18.6 Kg. had one kidney removed under sodium pentabarbital anesthesia. During the following six days the mean arterial blood pressure, obtained by direct femoral artery puncture and a mercury manometer, varied between 135 and 140 mm. Hg. At this time the second kidney was transplanted to the neck under ether anesthesia (renal autotransplant). The procedure was conducted in the course of observations on renal autotransplantation.[21] The autotransplant did not function and three days later it was removed. At this time the weight remained 18.6 Kg. and the mean arterial pressure was 135 mm. Hg. During this period and throughout the remainder of the observations peritoneal dialysis was conducted as previously described.[20] Two to three liter exchanges of peritoneal fluid were obtained per 24 hours. The diet, which was well tolerated, was that described elsewhere.[22]

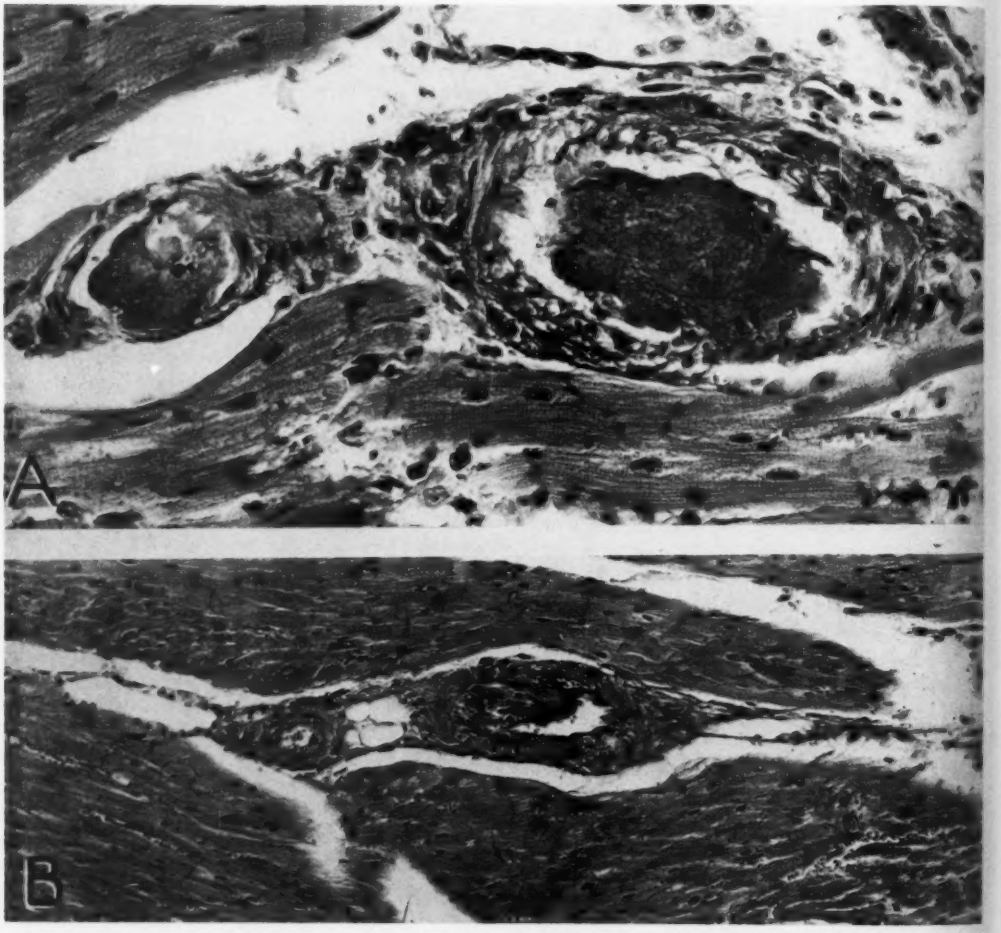
For the next seven days the mean arterial pressure was elevated to 180 to 205 mm. Hg. The body weight was 19 to 20 Kg. Despite the hypertension the animal was alert and active. On the eleventh day following the second nephrectomy another dog's kidney was transplanted to the groin by anastomosing the renal artery to the femoral artery and the renal vein to the femoral vein (renal homotransplant). This procedure was being evaluated under these conditions at that time.[23] The arterial pressure was 170 mm. Hg. This kidney functioned less than two days. At this time the dog died.

The autopsy revealed myriads of grey foci of necrosis, measuring 1 to 3 mm. in size, involving the left and right ventricles and the interventricular septum. There were confluent subendocardial hemorrhages of the left ventricle. The liver displayed focal necrosis. There were numerous hemorrhages in the stomach, intestines and urinary bladder. The contents of the large bowel were bloody.

The lesions throughout the various viscera were studied microscopically using the hematoxylin and eosin stain. In addition the myocardial lesions were studied by means of the Masson's trichrome stain, Mallory's stain, the phosphotungstic acid hematoxylin stain, the Van Gieson stain, the Schiff-periodic acid procedure as commonly used on formalin fixed tissue and the toluidine blue procedure as described by Gomori.[10]

Several occluded blood vessels were studied by means of serial sections about 5 microns apart. Vessels that were nearly round in shape were subjected serially to several measurements. The outside and inside diameters of the vessel were estimated by averaging two perpendicular diameters. The cross-sectional area of the roundish occlusive mass was also estimated by obtaining an average diameter. These measurements were conducted by projecting the slide on a screen and making measurements with a millimeter scale. The degree of magnification was determined by projecting a standardized scale.

FIG. 1

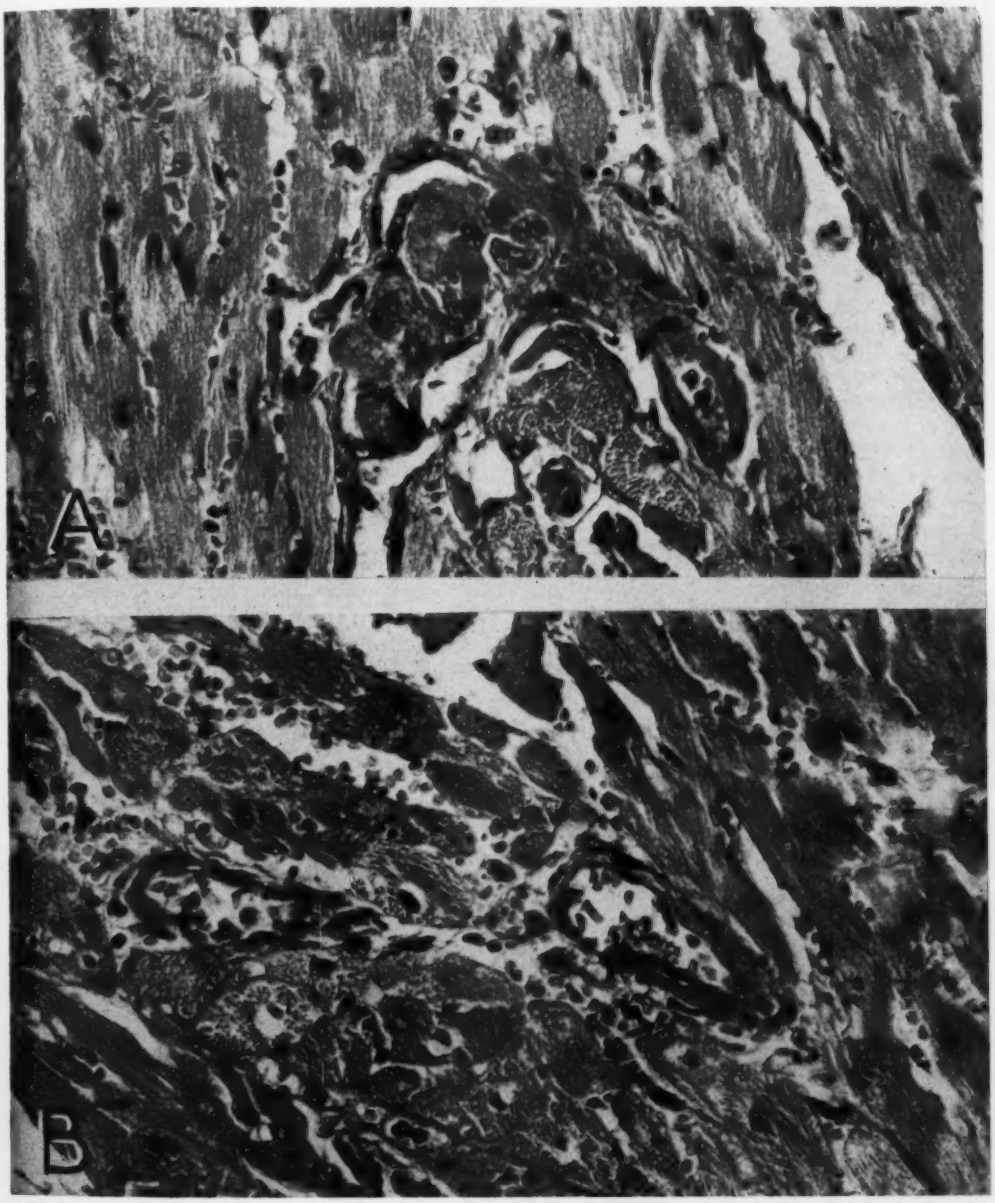


(A) Myocardium from nephrectomized dog (X370). H. & E. stain. A small artery and arteriole containing occlusive masses are shown. The occlusive mass in each example is partly covered by endothelial-like cells. The mass itself is partly hyaline and partly finely granular in appearance. The wall of the small artery contains changes in the media which are similar in appearance to those of the occlusive mass. (B) Myocardium from nephrectomized dog (X180). H. & E. stain. The occlusive mass in the small artery is covered by endothelium and has been partly invaded by similar appearing cells. This is interpreted as the beginning of organization of the mass. The wall of this artery also shows changes in the media which have the same appearance as the occlusive mass.

Results

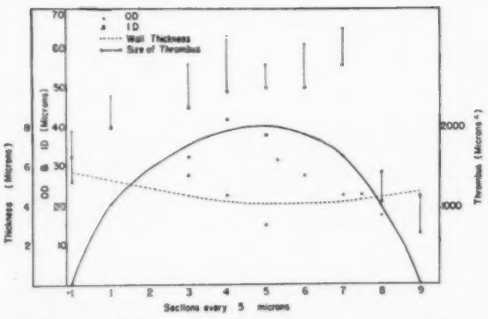
It should be noted that the vascular lesions described below have been observed by Orbison and associates[27] and by ourselves when no renal transplants were used following bilateral nephrectomy.

FIG. 2



(A) Myocardium from nephrectomized dog (X420). H. & E. stain. A capillary-like structure distended with an occlusive mass is shown. This structure has been invaded by endothelial-like cells. (B) Myocardium from nephrectomized dog (X420). H. & E. stain. Two vessels interpreted as precapillaries are shown. Each demonstrates a thin, ribbon-like deposit of hyalin underneath the endothelium. This is considered to be similar to the lesion described by Gore.

FIG. 3



This is a diagrammatic representation of the results of measurements on serial sections taken every 5 microns of an occlusive lesion. The cross section of the mass reaches a maximum and recedes to the base line. Both outer and inner diameters of the vessel wall increase and then decrease as the mass increases and decreases in size. At the same time there is a tendency for the thickness of the wall of the vessel to decrease slightly. The entire structure has a fusiform shape as described by Orbison.

Throughout the viscera, except for the lungs, the small arteries and arterioles displayed necrosis of the smooth muscle of the media. These structures appeared smudged or hyaline and intensely eosinophilic. Special occlusive vascular lesions were particularly prominent in the myocardium.

The miliary necrosis of the heart was corroborated microscopically. The necrotic myocardial fibers appeared intensely eosinophilic and at times smudged, having the so-called "fibrinoid" appearance. The vascular occlusions involved small arteries, arterioles and capillaries as depicted in figures 1 and 2. The masses in the lumens had the same eosinophilic, smudged or hyaline appearance as the material in the vessel wall. Continuity between the luminal mass and the medial necrotic material was frequently observed. Many of the "thrombi" had been present long enough to be either covered by or diffusely invaded by endothelial cells. Partial fibrous replacement of the structures was observed but only rarely.

Serial sections of the lesions identified its location within arterioles mainly. Occasionally capillaries contained the masses. By measuring the diameters of the vessel wall and the occlusive mass in serial sections certain general characteristics were obtained. A dilatation of the vessel at the site of the occlusion was demonstrated. This localized dilatation had the characteristics of the "aneurysm" described by Orbison[26] in "thrombotic thrombocytopenia" of man. Figure 3 depicts the type of data obtained with the serial sections. As the occlusive mass increased in size the vessel expanded. At the same time a tendency toward thinning of the vessel wall was noted. As the occlusive mass decreased in size the vessel wall reverted toward the normal characteristics. Since the capillary bed occurred beyond this level, the arteriolar location of the lesion was established.

Within certain smaller vessels a subendothelial deposit of hyalin, as described by Gore,[11] was noted.

The staining characteristics of the necrotic vessel wall, the occlusive masses and the necrotic myocardium are tabulated in table 1. With minor variations the procedures used indicated similar staining characteristics for these three altered structures. Thus the altered vessel wall and the necrotic myocardium were both intensely eosinophilic, intensely red with Masson's and Mallory's stain, yellow with the Van Gieson stain, reddish purple with the Schiff-periodic acid procedure, purple and orange-purple with the phospho-

TABLE 1

A TABULATION OF THE TINCTORIAL PROPERTIES OF THE THREE DISTURBANCES IN THE HEART OF THE BILATERALLY NEPHRECTOMIZED DOG. SIMILAR RESULTS ARE DEPICTED FOR THE NECROTIC MYOCARDIUM, THE DAMAGED VASCULAR WALL AND THE OCCLUSIVE MASS WITHIN THE BLOOD VESSELS

Stain	*Vascular Occlusive Mass*	*Vascular Wall*	*Necrotic Myocardium*
Hematoxylin and eosin	Eosinophilic	Eosinophilic	Eosinophilic
Masson trichrome	Intensely red or red and greenish-grey	Intensely red	Intensely red
Mallory	Intensely red or red and bluish-red	Intensely red	Intensely red
Van Gieson	Yellow	Yellow	Yellow
Phosphotungstic acid hematoxylin	Purple and purple and orange-purple	Purple and purple and orange-purple	Purple
Periodic acid-Schiff	Red-purple	Red-purple	Red-purple
Toluidine blue	Faintly blue	Faintly blue	Faintly blue

tungstic acid hematoxylin stain and light blue with the toluidine blue stain. The occlusive masses in most examples carried identical characteristics but in addition with the Mallory stain some occlusive masses had a mixture of intensely red material and a bluish-red substance and with the Masson trichrome stain some masses contained intensely red material mixed with a greenish-grey substance.

These observations indicated that all three morphologic changes in the myocardium, namely the altered arteriolar wall, the "thrombi" and the necrotic myocardium, displayed tinctorial characteristics which have been ascribed to "fibrinoid."[2, 7, 12]

Discussion

The occlusive vascular lesions observed in an occasional dog following bilateral nephrectomy appear to be very similar to the occlusive lesion of "thrombotic thrombocytopenia" (Moschcowitz's disease) of man. The following similar characteristics may be emphasized: the predominant arteriolar location of the lesions; the eosinophilic and granular, waxy or hyaline appearance of the thrombotic material; a direct continuity between the intraluminal mass and a similar substance in the vascular wall; the covering or permeation of the mass by endothelial cells; at times a thin deposit of subendothelial hyalin in precapillary or capillary vessels; an aneurysmal dilatation of the vessel involved; and certain tinctorial properties which have been considered to be of "fibrinoid" type.

The resemblance between the experimental lesion and that of the disease of man may be of more than passing interest. Bilateral nephrectomy of the dog is followed by acute cardiovascular lesions characterized by necrosis of myocardial fibers and necrosis of the smooth muscle of the media of small arteries and arterioles.[15, 18-20] The necrotic arteries have the appearance and staining characteristics of so-called "fibrinoid."[19] The direct continuity of the necrotic media and the occlusive masses as well as their similar appearance and tinctorial properties suggest a smooth muscle origin for the occlusive masses. Thus the present study is considered in keeping with the extrusion of the necrotic media into the lumen of the arteriole followed by coverage or invasion by endothelial cells. Additional staining properties of the thrombi with certain stains, as the Mallory and Masson stains, suggest the incorporation of constituents of blood into the masses in certain vessels. It is proposed that the similarity in appearance and staining of the necrotic myocardium and the changes within the vascular walls and luminal structure supports this thesis. A primary vascular origin is proposed for the experimental lesions in the dog. By implication this view supports the position of Gore,[11] Orbison,[26] and Fisher and Creed[7] with respect to "thrombotic thrombocytopenia" in man.

Why occlusive masses of the type encountered in "thrombotic thrombocytopenia" are not observed more frequently following experimental renal ablation is not known. This point, however, is not considered crucially antagonistic to the above proposal since the changes in the vessel wall are very common after experimental nephrectomy of the dog, and assuming the proposal valid this suggests that mechanisms for a centripetal spread of the altered wall are uncommon. In accordance with earlier morphologic observations[18] one such mechanism entertained is that of necrosis of the inner portion of the media with an intact outer portion. Since the animal develops a pronounced hypertension it is reasonable to expect the outer media to be contracting against the inner necrotic segment, thus tending toward a centripetal spread.

Similarities in the appearance and make-up of the experimental lesion and the human disease are not meant to imply a causal relationship. There are, however, certain points of interest in this respect between the two states. Thus, the lesions of "thrombotic thrombocytopenia" have been described in malignant hypertension of man.[5] Moreover, renal lesions have been observed in several other cases,[11] this being a prominent feature of an earlier case reported by the author and others.[24] Also bilateral nephrectomy is attended by another feature of "thrombotic thrombocytopenia," namely a hemolytic anemia.[25] The possibility of an intravascular disruption of erythrocytes has been entertained by Monroe and Strauss.[16] It is conceivable that the two conditions, renal ablation and "thrombotic thrombocytopenia"

have in common the presence of an agent(s) injurious to red blood cells and vascular walls with emphasis particularly on the smooth muscle of the media.

Summary

1. Occlusive vascular lesions have been encountered following bilateral nephrectomy of the dog which are similar in several respects with those of "thrombotic thrombocytopenia" (Moschcowitz's disease) of man.

2. It is suggested that several features of the experimental lesion support an origin of the occlusive masses via extrusion or herniation of the necrotic smooth muscle of the media into the lumen.

3. Certain speculations concerning the experimental lesions and those of "thrombotic thrombocytopenia" have been entertained.

Bibliography

1. Adelson, E., Heitzman, E. J., and Fennessey, J. F.: Thrombohemolytic Thrombocytopenic Purpura, A. M. A. Arch. Int. Med. 94:42, 1954.
2. Altshuler, C. H., and Angevine, D. M.: Histochemical Studies in the Pathogenesis of Fibrinoid, Am. J. Path. 25:1061, 1949.
3. Baehr, G., Klemperer, P., and Schifrin, A.: An Acute Febrile Anemia and Thrombocytopenic Purpura with Diffuse Platelet Thromboses of Capillaries and Arterioles, Tr. A. Am. Physicians 51:43, 1936.
4. Barondess, J. A.: Thrombotic Thrombocytopenic Purpura, Am. J. Med. 8:310, 1952.
5. Comess, O. H., and Oyamada, A.: Uremia and Disseminated Platelet-cell (Thrombocyte) Thrombosis, Report of a Case Due to Malignant Nephrosclerosis with Acute Pancreatitis, A. M. A. Arch. Int. Med. 89:802, 1952.
6. Dameshek, W.: Editorial, New Forms of "Idiopathic" Thrombocytopenic Purpura, Blood 2:597, 1947.
7. Fisher, D. R., and Creed, D. L.: Thrombotic Thrombocytopenic Purpura, Report of a Case with Discussion of Its Tinctorial Features, Am. J. Clin. Path. 25:620, 1955.
8. Fitzgerald, P. J., Auerbach, O., and Frame, E.: Thrombocytic Acroangiothrombosis (Platelet Thromboses of the Capillaries, Arterioles and Venules), Blood 2:519, 1947.
9. Gendel, B. R., Young, J. M., and Kraus, A. P.: Thrombotic Thrombocytopenic Purpura, Am. J. Med. 8:3, 1952.
10. Gomori, G.: Microscopic Histochemistry Principles and Practice, The Univ. of Chicago Press, 1952, p. 75.
11. Gore, I.: Disseminated Arteriolar and Capillary Platelet Thromboses, A Morphologic Study of Its Histogenesis, Am. J. Path. 26:155, 1950.
12. Koss, L. G.: Hyaline Material with Staining Reaction of Fibrinoid in Renal Lesions in Diabetes Mellitus, A.M.A. Arch. Path. 54:528, 1952.
13. Meacham, G. C., Orbison, J. L., Heinle, R. W., Steele, H. J., and Schaefer, J. A.: Thrombotic Thrombocytopenic Purpura, A Disseminated Disease of Arterioles, Blood 6: 706, 1951.
14. Mendeloff, A. I., and Smith, D. E. (Editors): Clinical-Pathologic Conference, Sudden Onset of Anemia, Ecchymoses, Fever, Neurologic Signs and Stupor, Am. J. Med. 18:498, 1955.
15. Montgomery, P. O'B., and Muirhead, E. E.: Similarities Between the Lesions in Human Malignant Hypertension and in the Hypertensive State of the Nephrectomized Dog, Am. J. Path. 29:1147, 1953.
16. Monroe, W. M., and Strauss, H. F.: Intravascular Hemolysis, A Morphologic Study of Schizocytes in Thrombotic Purpura and Other Diseases, South. M. J. 46:837, 1953.
17. Moschcowitz, E.: An Acute Febrile Pleichromic Anemia with Hyaline Thrombosis of the Terminal Arterioles and Capillaries, an Undescribed Disease, Arch. Int. Med. 36: 89, 1925.
18. Muirhead, E. E., Vanatta, J., and Grollman, A.: Hypertensive Cardiovascular Disease, An Experimental Study of Tissues in Bilaterally Nephrectomized Dogs, Arch. Path. 48:234, 1949.
19. Muirhead, E. E., Turner, L. B., and Grollman, A.: Hypertensive Cardiovascular Disease, Nature and Pathogenesis of the Arteriolar Sclerosis Induced by Bilateral Nephrectomy as Revealed by a Study of Its Tinctorial Characteristics, A. M. A. Arch. Path. 52:266, 1951.
20. Muirhead, E. E., Stirman, J. A., Jones, F., Lesch, W., Burns, M., and Fogelman, M. J.: Cardiovascular Lesions Following Bilateral Nephrectomy of Dog, Role of Hypertension and Other Factors on Pathogenesis, A. M. A. Arch. Int. Med. 91:250, 1953.
21. Muirhead, E. E., Stirman, J. A., and Lesch, W.: Reduction of Postnephrectomy Hypertension of the Dog by Homogenous Renal Transplant Through Means Other Than Desalting and Dehydration, With Observations on Control Autogenous Renal Transplant. In preparation (Abstract Am. J. Path.).
22. Muirhead, E. E., Jones, F., Stirman, J. A., and Lesch, W.: Experimental Uremia: Excessive Quantities of Plasma Protein and Nitrogen Removed in the Outflow Fluid During Peritoneal Irrigation of Bilaterally Nephrectomized Dogs, Surg., Gynec. & Obst. 97:189, 1953.
23. Muirhead, E. E.: Homogenous Renal Transplants After Bilateral Nephrectomy, Am. J. Med. 13:649, 1952.
24. Muirhead, E. E., Crass, G., and Hill, J. M.: Diffuse Platelet Thromboses with Thrombocytopenia and Hemolytic Anemia (Thrombotic Thrombocytopenic Purpura), Am. J. Clin. Path. 18:523, 1948.
25. Muirhead, E. E., Jones, F., Stirman, J. A., and Lesch, W.: Hemolytic Anemia of the Dog Following Bilateral Nephrectomy, Am. J. Physiol. 173:371, 1953.
26. Orbison, J. L.: Morphology of Thrombotic Thrombocytopenic Purpura with Demonstration of Aneurysms, Am. J. Path. 28:129, 1952.
27. Orbison, J. L., Christian, C. L., and Peters, E.: Studies on Experimental Hypertension and Cardiovascular Disease, I. A Method for the Rapid Production of Malignant Hypertension in Bilaterally Nephrectomized Dogs, A. M. A. Arch. Path. 54:185, 1952.
28. Singer, K., Bornstein, F. P., and Wile, S. A.: Thrombotic Thrombocytopenic Purpura, Hemorrhagic Diathesis with Generalized Platelet Thromboses, Blood 2:542, 1947.
29. Singer, K., Motulsky, A. G., and Shanberge, J. N.: Thrombotic Thrombocytopenic Purpura. II. Studies on the Hemolytic Syndrome in This Disease, Blood 5:494, 1950.

Golden Anniversary Meeting

SOUTHERN MEDICAL ASSOCIATION

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Generalized Ringworm Infections:

Report of a Case Due to *Epidermophyton Floccosum**

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The authors have reviewed the subject of generalized eruptions due to fungi and have reported an instance due to a specific organism.

THE PURPOSE OF THIS PAPER is to again emphasize the power of generalized ringworm infections to imitate other dermatoses, and to report an unusually extensive case caused by *Epidermophyton floccosum,* which is rarely found in generalized infections.

Review of the Literature

Lewis, Montgomery and Hopper,[1] in 1938, called attention to the widespread involvement which can be produced by *Trichophyton purpureum (rubrum),* the lack of central clearing and the consequent ability to mimic other dermatoses. Since this publication many such cases have been seen, and they have usually been found due to *T. rubrum.* These cases are prone to give a negative trichophytin reaction and they are extremely resistant to treatment.

Tolmach and Schweig,[2] in 1940, reported an extensive dermatitis covering two thirds of the body surface, exhibiting a sharp border of changing pattern, but without central clearing. At times groups of papules and vesicles were present which gave somewhat the appearance of dermatitis herpetiformis. There was no sensitization to trichophytin. *Trichophyton rubrum* was grown from all involved areas.

Baer and Muskatblit[3] recorded a case of chronic erythroderma with large gyrate and circinate areas on the extremities, neck, and trunk, in which *T. rubrum* was recovered from various portions of the eruption. This patient had evidence of congenital ichthyosiform erythroderma, and the authors suggested that the excessive amount of corneous material and the diminished sweating influenced the extensive involvement.

Rothman[4] attempted to account for the alteration in individual susceptibility to *Trichophyton rubrum* on the basis of an increased tolerance to glucose, as evidenced by glucose tolerance tests performed on 20 cases having resistant infections with this organism. Despite administration of thyroid substance to alter the glucose metabolism, no decisive change in the cases being treated was noted and this thesis is not yet substantiated.

Lewis, Hopper and Scott[5] reported three cases in which there was coexistent lymphoblastoma and generalized cutaneous involvement with *T. rubrum.* The authors postulated that in these cases the lymphogenous disease lowered the resistance of the host sufficiently to predispose to the active invasion by the fungus.

Swartz and Conant[6] described four cases of extensive lichenoid dermatitis due to *T. rubrum* which were very resistant to treatment.

Waisman[7] reported four cases of eruptions similar to or identical with erythema perstans, *T. rubrum* being cultured from the lesions of each case. He made the point that all these lesions were infections with *T. rubrum* and not dermatophytids associated with a focus of that organism.

The work of Jillson and Hoekelman[8] indicated that at least some cases of erythema annulare centrifugum are dermatophytids.

We have seen cases which could not be distinguished from extensive ringworm infection, in which repeated examinations failed to reveal fungi, and in which the diagnosis of erythema annulare centrifugum had to be made after ruling out all other possibilities.

Cases of generalized dermatomycosis without sharp borders and without central clearing may closely simulate atopic dermatitis, various erythrodermas, contact dermatitis (especially after extensive treatment), erythema annulare centrifugum, early mycosis fun-

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FIG. 1

Epidermophyton floccosum infection, vesicular and scaly eruption of face.

goides, dermatitis herpetiformis, pityriasis rubra, and early non-specific eruptions of leukemia and members of the lymphoblastoma group. The absence of a sharp border and central clearing in some cases of generalized dermatomycosis are a source of confusion, and the superficial dandruff-like scaling sometimes found about the temples and ears does not suggest the diagnosis of dermatomycosis unless other and more typical lesions are seen.

While *T. rubrum* has usually been found to be the causative organism in generalized dermatomycosis, a few reports have appeared in which *Epidermophyton floccosum* was the etiologic agent, and in which unusual locations have been involved.

Gjessing and Mossige[9] in an article on epidermophyton infections, in 1937, reported cases in three brothers, two of whom had ichthyosis. In one of these, though not a generalized infection, it was rather extensive and involved both the face and scalp in a fine, superficial scaling, the scales containing epidermophyton. The hair itself was not involved.

Morris Moore[10] in an article on dermatomycoses in Bercovitz's *Clinical Tropical Medicine* pictures an infection due to *Epidermophyton floccosum* covering large areas of the body surface.

Pluss and Kadas,[11] in 1954, described a case of monilial granulomas with coincident infection with *E. floccosum*, involving the pubic, crural and anal regions as well as the chest and arm. While this was not a generalized dermatomycosis, it is of interest here because the infection had spread from its usual areas to the chest and arm, and because a deeper fungus infection was present, indicating possibly some deficiency in the patient's immunity. Trichophytin skin test was negative.

Garb and Frank[12] observed a patient in whom most of the glabrous skin was involved in an epidermophyton infection but the nails were not affected. This patient later died of lymphatic leukemia.

Case Report

S. V., a Mexican man, age 20, was examined in December, 1953, for an extensive eruption of the face, trunk and extremities of one year's duration. The dermatitis had begun in the crural region but had spread to the extent that when first seen by us very

FIG. 2

Epidermophyton floccosum infection, superficial scaly dermatitis of extensor surface of forearms.

FIG. 3

Epidermophyton floccosum infection, involvement of trunk by scaly, slightly infiltrated dermatitis, showing sharp border at left.

FIG. 4

Epidermophyton floccosum infection, involvement of toenails.

little skin except the scalp remained free of involvement. The face was covered with an exudative dermatitis which strongly resembled a contact dermatitis or an exudative neurodermatitis (Fig. 1). There was no history of irritants which might have been responsible for the exudation. On the trunk and extremities were large confluent areas of dry scaly dermatitis, which at first were thought to be lesions of a generalized neurodermatitis; however, on later examinations certain areas appeared which had sharp borders (Figs. 2 and 3).

The palms and soles were scaly and at times there were vesicles about the toes and soles. All toenails were thickened and brittle and the interdigital spaces were macerated (Figs. 4 and 5). There was a very large mass of lymph nodes in the right groin, slightly tender to pressure. The clinical picture was suggestive of erythroderma associated with lymphoblastoma, with the exception of the lesions seen on the feet and in the toenails.

Repeated blood counts showed nothing significant. Fasting blood sugar was 107 mg. per 100 cc. Trichophytin intradermal reaction after 48 hours showed only a very slight reaction. Scales from the face, trunk and extremities showed repeatedly an abundance of mycelia; cultures from all areas, including the toenails, were typical of *Epidermophyton floccosum*. (Identification of this organism was confirmed by Dr. John Lamb.)

Histopathological examination of tissue removed from a lesion on the trunk revealed that a moderate number of mycelial threads were present in the stratum corneum. There was moderate hyperkeratosis and parakeratosis with considerable follicular plugging. Between the layers of the stratum corneum were found accumulations of lymphocytes and polymorphonuclear leukocytes. The rete showed both intra- and intercellular edema; rete pegs were elongated. There was a rather dense cellular infiltration extending from the summit of the interpapillary spaces down into the midcutis. This infiltrate consisted of lymphocytes, plasma cells and eosinophilic leukocytes (Fig. 6).

FIG. 5

Epidermophyton floccosum infection, sharply marginated lesion on back of hand.

In the treatment of this case the principal local medications were Asterol ointment, Salundek ointment and half strength Whitfield's ointment, these being used one at a time at varying intervals during therapy. In addition, 5 per cent chrysarobin in chloroform was occasionally applied to the toenails and the more active lesions, except the face. X-ray therapy was given to the toenails. Stilbestrol in 0.5 mg. daily dose was given for one month but progress during that time was no more rapid than with local treatment alone.

In the first weeks of treatment the progress was very slow but the patient's skin has been clear now for almost a year, with the exception of the lesions of the toenails and a recent brief recurrence of vesicles on the soles and about the toes. The inguinal adenopathy has entirely disappeared. Thus far no blood dyscrasia has developed but the patient will be observed in future years for such occurrence.

FIG. 6

Low power photomicrograph of section from case presented.

Discussion

The unusual features shown in this case are as follows:

(1) Involvement of the toenails, which is rare in epidermophyton infections;

(2) Almost total involvement of the face with an exudative dermatitis resembling contact dermatitis or exudative neurodermatitis;

(3) Better response to therapy than usual with similar infections of *Trichophyton rubrum*, and no general recurrence (re currence on feet might be expected in the presence of infection of the toenails);

(4) Presence of *Epidermophyton floccosum* in abundance in scrapings from all parts of the involved skin, including the toenails;

(5) Major portion of eruption confluent, with no central clearing and with no sharp borders except in an occasional area;

(6) Very faintly positive response to injection of trichophytin (indicating low resistance to organism similar to *T. rubrum* infections);

(7) Marked inguinal adenopathy; and

(8) Unusual histopathologic reaction.

In connection with the last feature, this severe and deep histopathologic reaction is at variance with the picture usually described in generalized dermatomycosis, and is much more marked than we have found in *Trichophyton rubrum* infections. Whether this is characteristic of severe epidermophyton infections or whether it is simply an indication of the severity of the process we are unable to say. It seems likely that the latter is the case and that this amount of pathologic change might be found occasionally in severe infections due to other fungi.

One wonders why an infection which is usually confined to certain favored areas will, in an occasional individual, become generalized. A number of conditions may occur which influence the generalization of dermatomycosis, the importance of all of them being at present a matter for speculation:

(1) Debilitating disease which interferes with the natural immunity (e.g., anemia or leukemia and the various members of the lymphoblastoma group);

(2) Presence of excess keratin in which the organism may grow (may be due to ichthyosis, ichthyosiform erythroderma or infrequent bathing and poor body hygiene);

(3) Disturbances of carbohydrate metabolism; and

(4) Lack of specific immunity (as shown by a negative or faintly positive reaction to trichophytin).

Summary

The literature on generalized ringworm infections has been reviewed, and mention made of the various coincident conditions which might possibly have influenced the spread of the infection.

A case of generalized infection is reported which was due to *Epidermophyton floccosum*.

Bibliography

1. Lewis, G. M., Montgomery, Royal, and Hopper, Mary E.: Cutaneous Manifestations of Trichophyton Purpureum, Arch. Dermat. & Syph. 37:823, 1938.
2. Tolmach, J. A., and Schweig, Joel: Generalized Trichophyton Purpureum Infection Simulating Dermatitis Herpetiformis; Report of Case, Arch. Dermat. & Syph. 41:732, 1940.
3. Baer, R. L., and Muskatblit, Emanuel: Extensive Trichophyton Purpureum Infection, with Nevoid Anomaly; Report of Case Together with Mycologic and Physiologic Studies, Arch. Dermat. & Syph. 56:834, 1947.
4. Rothman, Stephen: Systemic Disturbances in Recalcitrant Trichophyton Rubrum (Purpureum) Infections, Arch. Dermat. & Syph. 67:239, 1953.
5. Lewis, G. M., Hopper, Mary E., and Scott, Michael J.: Generalized Trichophyton Rubrum Infection Associated with Systemic Lymphoblastoma, Arch. Dermat. & Syph. 67:247, 1953.
6. Swartz, J. H., and Conant, N. F.: Extensive Lichenified Eruption Caused by Trichophyton Rubrum, Arch. Dermat. & Syph. 42:614, 1940.
7. Waisman, Morris: Trichophyton Rubrum Infection Simulating Erythema Perstans, J. Invest. Dermat. 22:237, 1954.
8. Jillson, Otis Field, and Hoekelman, Robert A.: Further Amplification of Concept of Dermatophytid; Erythema Annulare Centrifugum as a Dermatophytid, Arch. Dermat. & Syph. 66:738, 1952.
9. Gjessing, H. Chr., and Mossige, Kjell: Epidermophytosis, Arch. Dermat. & Syph. 36:1154, 1937.
10. Moore, Morris: Clinical Tropical Medicine (Bercovitz), New York and London, Paul B. Hoeber, 1944, p. 683.
11. Pluss, J. M., and Kadas, L.: Case of Monilial Granuloma Associated with Superficial Moniliasis and Epidermophytosis, J. Invest. Dermat. 23:317, 1954.
12. Garb, J., and Frank, A. G.: Mycotic Eczema due to Epidermophyton Inguinale (Case presentation before Bronx Dermatological Society on March 17, 1949), Arch. Dermat. & Syph. 62:159, 1950.

Discussion (Abstract)

Dr. J. L. Pipkin, San Antonio, Tex. I enjoyed Drs. Smith's and Garrett's study with all of its practical aspects. We are indebted to them for calling to our attention the capabilities of this fungus (namely, *Epidermophyton floccosum*) to produce bizarre and unusual clinical pictures which so closely simulate nonmycotic entities. Their review of the literature in this regard is timely.

At times this mimicry is so marked and/or the clinical picture is so altered and distorted, by a self-medication therapeutic dermatitis or an iatrogenic dermatitis from prescribed medication, that a diagnosis cannot be made by inspection. It requires the help of the laboratory. Fortunately this organism is usually in such abundance in the scales that it is easily recovered in the fresh hydroxide preparations or by culture.

The clinical picture presented by their patient has several unique features, namely, the generalization of the eruption, covering much of the glabrous skin; the duration of one year; the absence of central clearing, the scant sharp margination, the exudative feature with the associated marked scaling; and particularly, the nail involvement. All are worthy of note. To our knowledge we have not seen onychomycosis due to *E. floccosum*. We have isolated this organism from under the fingernails in patients suffering from this disease, where it was mechanically implanted during scratching. Yet there were no local signs or symptoms.

Usually the eruption due to this fungus is limited to the body folds and webs of the toes, the duration is short, often self limited and the therapeutic response is rapid and satisfactory. However, when the immunologic defense of the patient is lowered, by many known and unknown factors, as to make the skin defenseless to the fungus, generalization occurs. Now just a word regarding treatment. Obviously it is important to correct, if possible, any underlying or influencing constitutional factors which so alter the immunologic defense mechanism, making such a widespread fungus infection possible. It is also well to remember that infection caused by *E. floccosum* responds more readily than those due to *Trichophyton rubrum*. There is a better chance for a cure in the case of the epidermophyton; therefore the treatment need not be so severe, vigorous, nor persistent.

It is my opinion that the time honored salicylic-benzoic acid preparations should constitute at least one part of the treatment regimen. We feel it is distinctly advantageous in treating many fungus infections to use a multiplicity of remedies, frequently changing the medications, i.e., alternating the remedies every 4 or 5 days. Fungi have the uncanny ability to adapt themselves to the situation at hand. In other words they acquire a toleration to the medicament. A frequent change helps to obviate this. I enjoyed this presentation very much.

Dr. C. Barrett Kennedy, New Orleans, La. I feel Dr. Smith and Dr. Garrett have made a fine contribution to dermatologic writings. Their summary of the literature was particularly valuable. The association of deep mycotic disease with lymphoblastic conditions has been found with greater frequency of recent years. On our service at Charity Hospital a stem cell leukemia exfoliativa dermatitis responded so poorly to nitrogen mustard that on a re-evaluation biopsy we were surprised to find that he also was suffering now from a deep mycotic infection as well. Perhaps due to technical difficulties, or a lack of sustained effort on our part, we have failed to show any concurrence of extensive superficial fungus infection superimposed on our exfoliative cases.

I am going to exercise the privileges of a discussant and review a few of the facts presented and try to tell you of our own experiences with similar cases. I would like to know if the patient was obese. Obesity has been outstanding in most of our patients having extensive fungus infection. These individuals dread the advent of hot weather as they know they could have extensive recurrences at this time. Even the more severe cases among them seem to clear somewhat with cooler living conditions. The absence of scalp lesion attracted my attention as most of our individuals showed extension of their lesion onto the scalp and their hairline did not appear to be any barrier to the extension of the infection, the hair itself being unaffected by the disease. I was not surprised to hear of the involvement of the nails as in most of our patients who have chronic fungus disease there is extensive infection of this tissue. In fact, we believe that a successful management of these cases calls for a rather radical trimming of the nails, and the removal of as much of the infected tissue beneath them as is possible with a dull curette. We of course have used most of the drugs that Drs. Smith and Garrett have in the treatment of these cases. I would like to mention that Anthralin has been the most successful along with Quinolor in treating these cases. I have had very little sensitization to Anthralin, though in one of our cases in private practice a 0.25 per cent Anthralin ointment used too freely in the groin caused a marked and persistent case of hidrosadenitis suppurativa. Finally, I would like to go into the problem of desensitization with fungus extracts. It is our experience that the value of fungus desensitization has been rather disappointing. I believe that the otolaryngologists are the only physicians who practice it as a regular therapeutic procedure in the management of otitis externa which they claim is due to fungus infections in most instances. They use very dilute solutions on the theory that the immune mechanism must not be overstimulated and most of them feel that it is a worthwhile procedure. Stock vaccine of trichophyton and oidiomycin and autogenous fungus extracts have been very disappointing. We have used autogenous vaccines in our cases of *Candida albicans* which were extensive. I felt that in some instances it actually was detrimental to the welfare of the patient. I believe our experiences along this line coincide with those of Lamb and Hazel, and I agree with many who have felt that these fungus extracts are limited in usefulness to various cases in which the areas involved were small and limited in extent, such as perhaps in the otitis externa cases. It does not seem possible that there is any way of stimulating immunity in an individual who is so lacking in his immune reactions that he will allow a usually localized disease to become generalized. I feel these cases fit into the same category as those of sarcoidosis in which negative tuberculin reactions and all other types of immune reaction have been shown to be negative. I am sure that all of us look forward to the day when we shall have some type of specific therapy for the management of these recalcitrant cases.

Dr. Smith (Closing). I want to thank Dr. Pipkin and Dr. Kennedy for their discussions. In view of the rarity of onychomycosis caused by epidermophyton, I do not want to say that this nail infection was positively caused by that organism; however, the evidence points to that being the case. The generalized dermatitis was definitely caused by epidermophyton, and we

did culture this organism from the toenails in pure culture. There was no involvement of the fingernails, so it is unlikely that the presence of epidermophyton on the toenails was accidental, and that the disease there was caused by another organism.

I think all cases of generalized exfoliative dermatitis and all other erythrodermas of unknown origin should be carefully studied mycologically, for one will sometimes find pathogenic fungi where they had not been suspected. If there is no sharp border and no central clearing, usually one will not suspect dermatomycosis.

Dr. Kennedy was interested in knowing whether this boy was obese. He was not, he was a young man of medium weight.

Pseudoparalysis of the Inferior Oblique Muscle

LOUIS J. GIRARD, M.D.,* *Houston, Tex.*

The author describes four types of pseudoparalysis of the inferior oblique muscle.

COMPLETE OR PARTIAL PARALYSIS of the inferior oblique muscle may sometimes be simulated by structural muscle anomalies. Dr. Harold W. Brown[1] was the first to point out that paralysis of the inferior oblique muscle may be simulated by congenital retraction of the tendon sheath of the ipsilateral superior oblique. Since his description of this syndrome, the author has observed several cases which presented the same clinical findings described by Brown, but at operation showed other etiologic factors producing underaction of the inferior oblique.

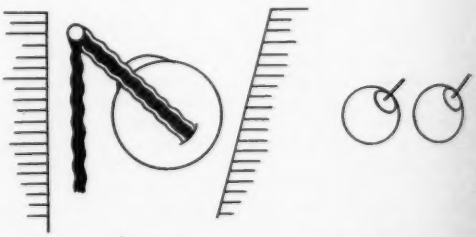
An analysis of these cases has demonstrated that there are several structural conditions which must be considered.

Classification

True paralysis of the inferior oblique muscle may be defined as a complete paralysis or underaction of the inferior oblique which is due to abnormalities in the muscle or nerve supply. *Pseudoparalysis of the inferior oblique* is used to designate a paralysis or underaction which is not primary in the inferior oblique but which is secondary to structural changes which prevent the normal contraction of the inferior oblique.

Type I. Congenital retraction of the tendon sheath of the ipsilateral superior oblique (superior oblique tendon sheath syndrome[2]). The striking feature of this type is the presence of a short anterior tendon sheath of the superior oblique that restricts passive movements of elevation in the nasal field. The tendon sheath of the superior oblique is fixed to and terminates at the trochlea (Fig. 1). "With this fixed point, and another at the scleral insertion of the superior oblique as the sheath fuses with the tendon at its insertion in the sclera, the tendon sheath will, if short, restrict elevation in the nasal field (Fig. 2). The linear distance from the trochlea to the insertion of the superior oblique increases on adduction and decreases on abduction. If the tendon sheath is taut when the eye is in the primary position, adduction will be pos-

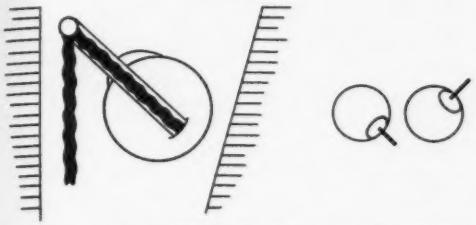
FIG. 1



Schematic drawing showing relaxation of both the tendon and the tendon sheath of the superior oblique during contraction of the ipsilateral inferior oblique.

*From the Department of Ophthalmology, Baylor University College of Medicine, Houston, Tex.

FIG. 2



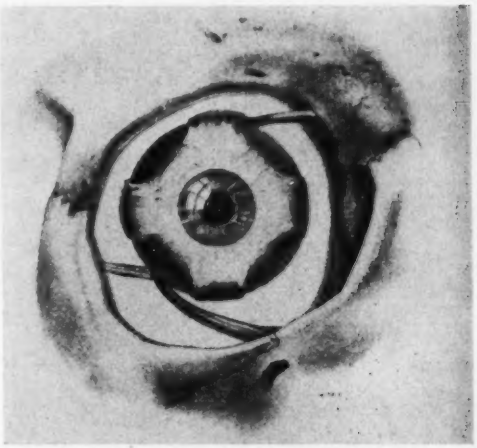
Schematic drawing showing congenital retraction of the tendon sheath of the superior oblique. Inability of the tendon sheath to lengthen produces pseudoparalysis of the ipsilateral oblique.

sible only as the eye is depressed. Normally this sheath acts as a check ligament for the inferior oblique."[3] Brown has described seven cases in which this condition was present.

Type II. Postoperative retraction of the tendon sheath of the superior oblique. During tucking of the superior oblique, failure to cut the anterior tendon sheath of the superior oblique may result in *postoperative* retraction of the anterior tendon sheath (Fig. 3). This, in essence, produces the same condition as Type I except that the retraction is surgical instead of congenital. This type is illustrated in cases 2 and 3.

Type III. Anomalous check ligaments on the insertion of the inferior oblique. This type is illustrated by case 1, which presented all of the clinical signs of paralysis of the inferior oblique. At operation, forced movements showed inability of the eye to be forced into the up and nasal position. The tendon sheath of the superior oblique was cut, and repeated forced movements were made. They again showed marked limitation of passive motion into the same field. Investigation of the inferior oblique was then made and showed a dense fibrous attachment from the insertion

FIG. 4

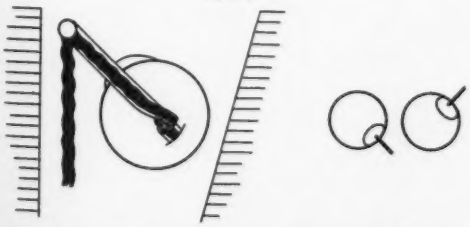


Position of anomalous check ligament extending from the insertion of the inferior oblique to the lateral wall of the orbit, found in case 1. (Original drawing from Duke-Elder: Textbook of Ophthalmology, 1938.)

of the inferior oblique to the lateral wall of the orbit (Fig. 4). When this attachment was cut all resistance to passive motion upward and nasally disappeared.

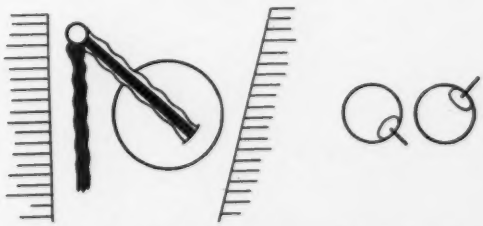
Type IV. Swelling on the superior oblique tendon passing through the trochlea. This is a theoretical type since it has not been demonstrated surgically. It is illustrated in case 4 which showed seeming complete paralysis of the inferior oblique on voluntary attempts to rotate the eye upward and nasally, but on repeated attempts there was sudden release of the restriction and full rotation of the globe upward and nasally was demonstrated. It was felt, after observing this case that the restriction was due to a congenital anomaly on the section of the superior oblique tendon which passes through the pulley (Fig. 5).

FIG. 3



Postoperative retraction of the superior oblique tendon sheath produced by tuck of both the tendon and the sheath. Such a procedure may result in pseudoparalysis of the ipsilateral inferior oblique. It may be prevented by cutting the tendon sheath.

FIG. 5



Theoretical case of swelling on the superior oblique tendon passing through the trochlea. Such a condition could produce pseudoparalysis of the inferior oblique. Case 4 appeared to have such a condition.

Case Reports

Case 1. J. B., age 7 years, was seen through the courtesy of Dr. Everett L. Goar. Vision without correction, R.E. 20/30 L.E. 20/30, with normal accommodation.

Muscle balance. Cover test:* LHt—35 prism diopters, LHt'—30 prism diopters. Cover test in the six diagnostic positions of gaze (Fig. 6):

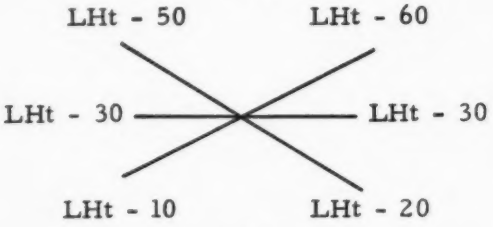


FIG. 6

Appearance of the eyes in the six diagnostic positions of gaze in case 1. Note the seeming complete paralysis of the right inferior oblique.

Diagnosis. (1) Left hypertropia, double elevator paresis, right eye.
(2) Possible pseudoparalysis of the inferior oblique; superior oblique tendon sheath syndrome.

Findings at operation. Under general anesthesia, forced movements into the field of action of the right inferior oblique showed marked limitation of motion. The superior oblique tendon was exposed and the tendon sheath cut. Repeated forced movements at this time showed no change in the restriction to passive motion. The right inferior oblique was then exposed at its insertion. Extending from the insertion of the inferior oblique to the lateral wall of the orbit was a dense fibrous band which blended imperceptibly with Tenon's capsule (Fig. 4). This band was cut at the insertion of the muscle. Forced movements were repeated and now showed no limitation into the field of action of the inferior oblique.

Operation. Incision of tendon sheath of superior oblique (no effect). Incision of check ligament of inferior oblique (release of passive motion up and nasally). Resection of right superior rectus, 3 mm. Resection of right inferior oblique, 10 mm.

Postoperative diagnosis. Pseudoparalysis of the right inferior oblique, Type 3, anomalous check ligament on the insertion of the right inferior oblique.

Postoperative findings. Cover test: RH—2 prism diopters, E'—4 prism diopters. Cover test in the six diagnostic positions of gaze (Fig. 7):

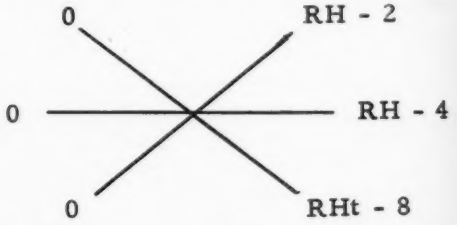


FIG. 7

Postoperative appearance of case 1. Note the full excursion of the right eye in the up and nasal position. At operation, an anomalous check ligament was found extending from the insertion of the inferior oblique to the lateral wall of the orbit.

Case 2. A. K. H., age 30, was seen through the courtesy of Dr. Everett L. Goar. Vision without correction, R.E. 20/20, L.E. 20/20, with normal accommodation.

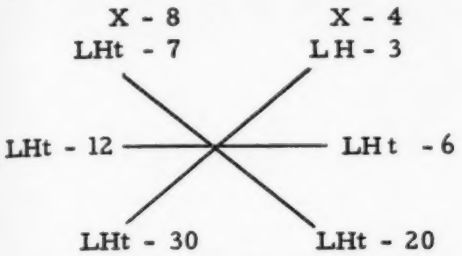
Muscle balance. Cover test: LHt—6 prism diopters,

*Legend for abbreviations:

O	—orthophoria	E'	—esophoria at 26 cm.
X	—exophoria at 6 M.	LH	—left hyperphoria
X'	—exophoria at 25 cm.	LHt	—left hypertropia
E	—esophoria at 6 M.	RH	—right hyperphoria

RHt—right hypertropia

X'—6 prism diopters, LHt'—8 prism diopters. Cover test in the six diagnostic positions of gaze:



Diagnosis. Double depressor paresis, left eye (LSO and LIR).

Operation. Resection of the left inferior rectus, 3 mm.; tuck of the left superior oblique, 8 mm.

Postoperative findings. Cover test sc: LH—1 prism diopter, X'—1 prism diopter, LH'—2 prism diopters. Cover test in the six diagnostic positions of gaze (Fig. 8):

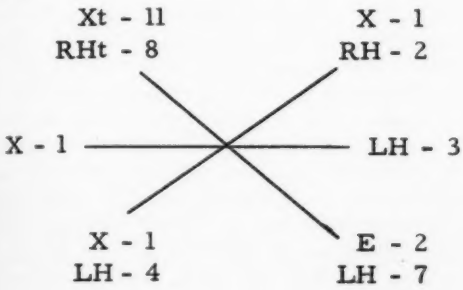


FIG. 8

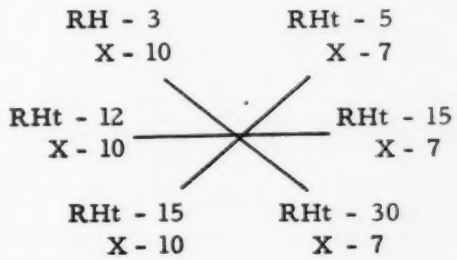
Postoperative appearance in case 2. The patient originally showed a paresis of the left superior oblique. A tuck of this muscle was performed without cutting the tendon sheath. The patient now shows a pseudoparalysis of the left inferior oblique due probably to postoperative retraction of the superior oblique tendon sheath.

Motility: The patient has fusion in five of the six cardinal positions of gaze. However, he now shows a limitation of the left inferior oblique produced presumably by postoperative retraction of the superior oblique tendon sheath.

Postoperative diagnosis. Pseudoparesis of the left inferior oblique, Type 2, postoperative superior oblique tendon sheath syndrome.

Case 3. R. D., age 36, was a patient at the Veterans Administration Hospital, Houston, Texas. Vision without correction, R.E. 20/20, L.E. 20/20, with normal accommodation.

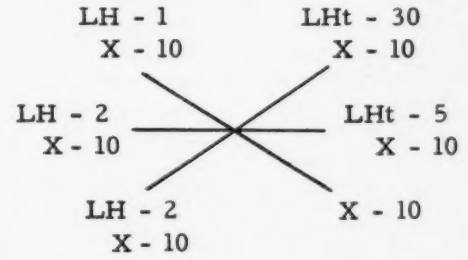
Muscle balance. Cover test: RHt—5 prism diopters, X'—10 prism diopters, RHt'—15 prism diopters. Cover test in the six diagnostic positions of gaze:



Diagnosis. Double depressor paresis, right eye (RSO and RIR).

Operation. Resection of the right inferior rectus, 3 mm.; tuck of the right superior oblique, 10 mm.

Postoperative findings. Cover test: LHt—5 prism diopters, LHt'—10 prism diopters. Cover test in the six diagnostic positions of gaze:



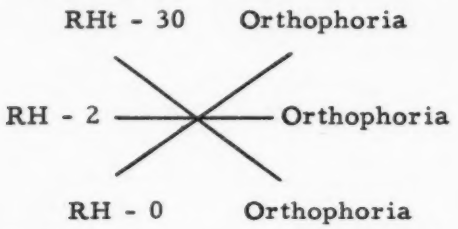
Motility: The patient now shows a limitation of the right inferior oblique.

Postoperative diagnosis. Pseudoparalysis of the right inferior oblique, Type 2, postoperative superior oblique tendon sheath syndrome.

Case 4. M. V., age 18, was seen in the clinic at Jefferson Davis Hospital, through the courtesy of Dr. Mary Fletcher. Vision without correction was R.E. 20/20, L.E. 20/20 with normal accommodation.

Muscle balance. Cover test: Orthophoria in the

primary position, distance and near. Cover test in the six diagnostic positions of gaze:



Motility: Versions showed an apparent complete paralysis of the left inferior oblique. However, when the eyes were directed up and to the right repeatedly, the left eye seemed to hesitate in its movement upward and nasally, but then was able to complete its excursion to a normal extent. It was the examiner's impression that some swelling on that portion of the superior oblique tendon which passed through the trochlea prevented immediate contraction of the inferior oblique, but repeated attempts allowed the tendon to pass through the trochlea and a normal excursion resulted. This situation is illustrated in figure 5.

Discussion

An analysis of the above cases shows that there may be more than one type of pseudoparalysis of the inferior oblique muscle. It should be apparent to the reader that the correct diagnosis of paralysis of the inferior oblique cannot be made except at the operating table. At this time forced movements should be made. If resistance to passive motion upward and nasally is encountered the possibility of either structural changes in the tendon or tendon sheath of the superior oblique or anomalous attachments to the inferior oblique must be kept in mind. The author agrees with Brown that, in addition to cutting a retracted tendon sheath, resection or advancement of the inferior oblique is usually necessary to overcome the vertical deviation present.

Besides congenital structural anomalies, the possibility of surgical production of pseudoparalysis of the inferior oblique must be kept in mind. Failure to cut the tendon sheath at the time or tucking of the tendon may result in limitation of the motion of the ipsilateral inferior oblique (pseudoparalysis).

Summary

Pseudoparalysis of the inferior oblique muscle is a term suggested for limitation of the inferior oblique when true paralysis is not the cause, but the limitation is secondary to structural changes in the superior oblique tendon or its sheath, congenital or postoperative, or anomalous check ligaments on the inferior oblique insertion. Four types of pseudoparalysis of the inferior oblique muscle are described: (1) congenital retraction of the tendon sheath of the ipsilateral superior oblique; (2) postoperative retraction of the tendon sheath of the superior oblique; (3) anomalous check ligaments on the inferior oblique; and (4) swelling on the superior oblique tendon passing through the trochlea. Case reports illustrating the above types are presented.

Bibliography

1. Brown, H. W.: Congenital Structural Motor Anomalies, Strabismus Ophthalmic Symposium, St. Louis, Mo., C. V. Mosby Co., 1950, p. 205.
2. Ibid.
3. Ibid.

Medicina Britannica; or a Treatise on such Physical Plants as are generally to be found in the Fields or Gardens in Great Britain; Containing a particular Account of their Nature, Virtue, and Uses. Together with the Observations of the most learned Physicians, as well ancient as modern, communicated to the late Mr. Ray, and the learned Dr. Sim. Pauli, Adapted more especially to the Occasions of those whose Condition or Conditions or Situation of Life deprives them, in a great Measure of the Helps of the Learned. By Tho. Short, of Sheffield, M.D. To which is added, an Appendix; Containing the True Preparation, Preservation, Uses and Doses of most Forms of Remedies necessary for private Families. The Third Edition. With a Preface by Mr. John Bartram, Botanist of Pennsylvania, and his Notes throughout the work, shewing the Places where many of the described Plants are to be found in these Parts of America, their Differences in Name, Appearance and Virtue, from those of the same Kind in Europe; and an Appendix, containing a description of a Number of Plants peculiar to America, their Uses, Virtues, &c.

—From the title page of a book printed by Benjamin Franklin in 1751.

CASE REPORT

Neurilemmoma of the Pharynx

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Winston-Salem, N. C.

TUMORS OF NERVE SHEATH ORIGIN presenting themselves in the pharynx are uncommon. Such a tumor was first described by Veracay, in 1908, and was named neurinoma by him in 1910. The first case in the United States reported as presenting in the pharynx was by Figi,[2] in 1933. Stout[6] reported 50 cases of this tumor occurring in various areas of the body in 1935. He felt that the proper term for tumors developing in the epineurium or perineurium of the nerve was *neurilemmoma*. Nerve bundles are not found inside the tumor. They are practically always benign, contrary to neurofibroma in which malignancy is common. Cases in various areas of the body have been reported from infancy to age 65 years.

Cranial or sympathetic nerves may be the site of neurilemmomas, or schwannomas, a term some pathologists prefer. The acoustic nerve is most commonly affected. In Stout's[6] excellent report, 26 per cent occurred above the clavicle. Martin,[1] who does only head and neck surgery, states that about one-half arise above the clavicle. In the neck, the vagus and hypoglossal nerves are probably the most common sites of origin for the tumor.

Guggenheim[3] recently collected 34 cases of neurilemmoma presenting in the pharynx from the world literature, reported one of his own, and added two after submission of his paper. Of these, 19 were from the United States.

They present usually in the lateral and sometimes in the posterolateral pharyngeal wall. By the time they are recognized they have often bulged to or beyond the midline, pushing the uvula toward the opposite side and causing dysphagia and unclear speech. Pain is not a symptom. Some have hoarseness due to paralysis of a vocal cord. Two of Slaughter's[5] four cases had this when first seen by him. He also noted and called attention to pulsation of the tumor due to its relationship to the internal carotid artery. However, other writers have not noted this sign. Three of Guggenheim's[3] patients had a Horner's syndrome when they presented themselves. There is some bulging externally, more noticeable when the head is turned to the opposite side, but markedly less noticeable than its protrusion into the pharynx.

Many of these masses have been biopsied from within the pharynx to establish the diagnosis. It is well to point out that if this is done the incision will have to be fairly deep in order to get a piece of the tumor. This method of biopsy may be subject to criticism on account of the possibility of introducing infection, although no ill effects have been reported. Martin[1] has suggested that aspiration biopsy be performed from the external approach and said that in his experience the diagnosis was correctly made in 6 of 7 cases.

These tumors are well encapsulated and therefore lend themselves well to surgical attack. Irradiation is of little value and even harmful, since it will not effect a cure, but makes operation more difficult. On cut section the tumors are pink or yellowish grey in color and soft in consistency. Sometimes small cysts containing straw colored or reddish brown fluid are present.

The chief hazard in operating is hemorrhage or nerve injury. Koop, Jordan and Horn[4] in reporting on six patients said that one patient operated on by the oral route died 24 hours postoperatively, probably as the results of inadvertent ligation of the internal carotid artery. In another patient operated by the oral route, the operator had to cope with much bleeding. The external approach, as advocated by Slaughter,[5] would largely ob-

viate these difficulties. In Guggenheim's[3] report, about one-half of the patients were operated upon by the oral route.

By using a generous curved incision, extending from the tip of the mastoid process to the submental area below the mandible and with the convexity downward, a good exposure is obtained. The external carotid artery may be readily ligated with impunity. After exposing the slight external bulge of the tumor, a vertical incision is made in the capsule so as not to divide any nerve fibers. Finger dissection can then shell out the tumor and the mucous membrane need not be perforated. Gauze packing should be loosely placed to the depth of the wound and removed gradually at subsequent dressings.

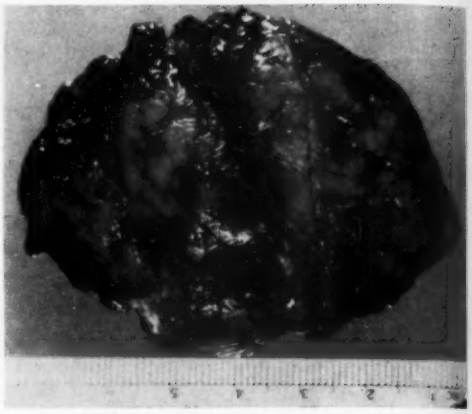
It is interesting to note that in Guggenheim's[3] paper, 10 patients had a postoperative Horner's syndrome, of which 3 were present prior to operation and 5 had paralysis of the vocal cord of which 3 persisted and were presumably permanent.

Case Report

The patient was a healthy, white, 29 year old man, who presented himself in October, 1951, with a history of having been told two years prior that he had a tumor in his "throat," and was advised to consult a surgeon. He was examined and found to have a painless, nontender mass 8 cm. in size protruding from the lateral pharyngeal wall past the midline of the oral pharynx and pushing the uvula well beyond the midline. It was firm and did not pulsate. Externally there was a slight bulge below the mandible on the right, which was more noticeable when the patient turned his head to the left.

Biopsy was performed through the oral route on November 1 and revealed neurilemmoma. It is interesting that the patient had a Horner's syndrome following this procedure. On November 7, the lesion was excised through an external approach with a curved incision with the convexity downward, extending from the tip of the mastoid to the submental region. After ligating the external carotid artery, the capsule was incised with a vertical incision and the tumor shelled out easily by finger dissection. It was yellowish grey in color and measured 7 by 4.5 by 3 cm. (Fig. 1). There was no hemorrhage. The cavity was loosely packed with plain gauze packing and the wound was closed. The packing was removed gradually at subsequent dressings. The postoperative course was smooth.

FIG. 1



Gross specimen of neurilemmoma.

The patient was hoarse postoperatively, and examination of the larynx by mirror revealed a right abductor paralysis. The hoarseness has disappeared, but the cord paralysis and the Horner's syndrome have persisted. To date the lesion has not recurred.

Summary

1. Primary tumor of the nerve sheath has been discussed.

2. A report of a case of neurilemmoma presenting in the pharynx has been given.

Bibliography

1. Ehrlich, H. E., and Martin, H. E.: Schwannoma in the Head and Neck, Surg., Gynec. & Obst. 76:577, 1943.
2. Figi, F. A.: Solitary Neurofibroma of the Pharynx, Arch. Otolaryngol. 17:386, 1933.
3. Guggenheim, Paul: Schwannoma of the Pharynx, J. Internat. Coll. Surgeons 19:450, 1953.
4. Koop, C. E., Jordan, H. E., and Horn, R. C.: Schwannoma of the Pharynx, Surg., Gynec. & Obst. 85:641, 1947.
5. Slaughter, D. F., and de Peyster, F. A.: Pharyngeal Neurilemmoma of Cranial Nerve Origin, Arch. Surg. 59:386, 1949.
6. Stout, A. P.: The Peripheral Manifestations of the Specific Nerve Sheath Tumor, Am. J. Cancer 24:751, 1935.

Hotel Application Form Appears in this issue

Carcinomas of the Colon Associated with Adenomas: A Preventable Disease*

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The adenomatous polyp, not a rare lesion, is the forerunner of carcinoma of the colon in almost all instances. The diagnosis of treatment of this benign lesion is the best prophylaxis against carcinoma of the colon, one of the common forms of malignancy.

In 1947, a survey study by the United States Department of Public Health re-emphasized the morbidity from cancer of the colon.[1] Ten metropolitan areas, selected to represent different geographic regions of the United States, were chosen for the study. The estimated population of the survey areas was 14.6 million people. The survey studies included all new cases of cancer confirmed by microscopic study in those areas between the years 1947 and 1948. A total of 46,390 new cases of cancer of all forms were reported. The greatest number of cases of primary carcinoma occurred in the colon and rectum, even exceeding the number of cases of cancer of the skin. The second most frequent malignancy in the male was cancer of the colon. This was exceeded only by cancer of the skin. In the female, cancer of the colon and rectum was the third most frequent malignancy.

It is well established that the majority of cancers of the colon, if not all, arise from adenomatous polyps. It is possible with the new diagnostic aids to locate these polyps and eradicate them while many are still benign or noninvasive. Few other forms of carcinoma permit such prophylaxis. An appalling number of these lesions are allowed to become malignant because of the failure to search specifically for them. Exclusive of rectal lesions, a review of 79 personal cases is presented in which operation for polyps of the colon was carried out.

Incidence

In his private practice, between 1944 and 1955, the author has operated on 79 patients with adenomatous polyps of the colon. Of this group 41 or 51.9 per cent were males and 38 or 48.1 per cent were females. The youngest patient was 3 years of age and the oldest 77 years of age. The incidence in decades is given in table 1. The greatest incidence was in the sixth decade and the next greatest in the fifth decade of life. There were 14 patients or 17.7 per cent with more than one polyp (this does not include cases of familial polyposis). One child of 3 years of age showed innumerable lesions with normal mucosa between the lesions and no family history of the disease. A colectomy and ileosigmoidostomy were done. In figure 1 are shown the anatomic location of the lesions. It can be seen that polyps occur more frequently in the distal colon. DeMuth and associates[2] have reported that approximately two-thirds of the polyps and one-half of the carcinomas of the colon are within reach of the 25 centimeter sigmoidoscope.

Diagnosis

In 80 per cent of the patients of this series the presenting symptom was bleeding. In 5

TABLE 1

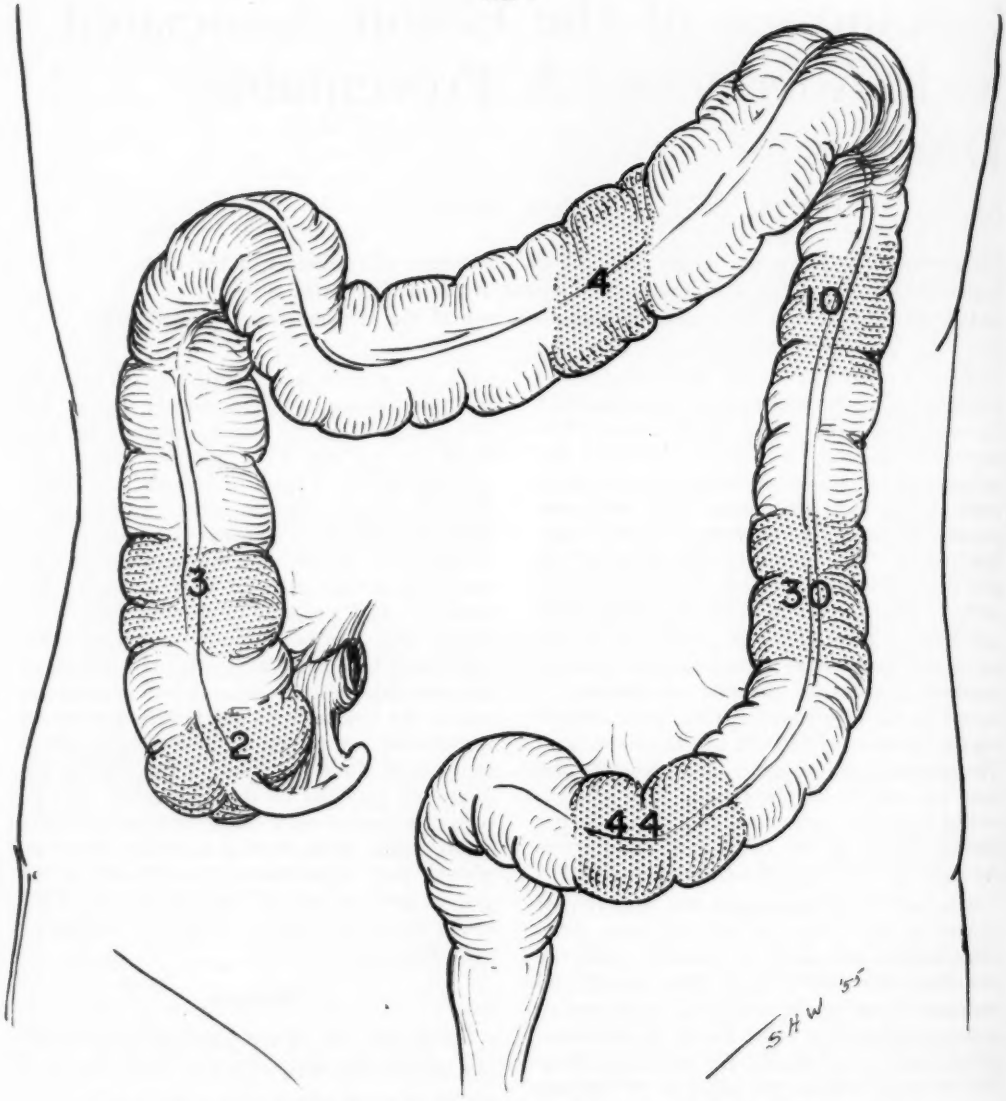
INCIDENCE OF POLYPS AS RELATED TO AGE

Decade of Life	*Number of Cases*	*Per Cent*
First	15	19.0
Second	3	3.8
Third	4	5.0
Fourth	11	13.9
Fifth	17	21.5
Sixth	19	24.1
Seventh	8	10.1
Eighth	2	2.6
Total	79	100.0

*Read before the Section on Proctology, Southern Medical Association, Forty-Ninth Annual Meeting, Houston, Tex., November 14-17, 1955.

†From the Department of Surgery, Vanderbilt University School of Medicine, Nashville, Tenn.

FIG. 1



The number of polyps removed through transabdominal approach, from 79 patients, excluding the rectum.

patients the chief complaint was hemorrhoids. In 3 children the mother had observed a protruding mass from the anus. Change in bowel habits, abdominal pain, tenesmus, mucus discharge and adbominal fullness were less frequent complaints. Polyps were occasionally found during routine sigmoidoscopy for other anorectal lesions. The methods of diagnosis are generally made by examination with the finger, the sigmoidoscope, and the double contrast roentgenogram. In this series rectal polyps are not included per se, but several of these cases represent patients in whom sigmoidoscopy revealed a polyp and subsequent x-ray studies disclosed lesions higher up. Because of the incidence of multiple lesions in 21.5 per cent, each patient found to have a polyp should have a complete study of the colon if there is no contraindication. The 25 centimeter sigmoidoscope, as previously stated,

can demonstrate the majority of polyps of the colon. In this series of patients with polyps, 38 or 48.7 per cent of the total number of polyps were visualized. Many polyps of the rectum and rectosigmoid colon can be biopsied and then destroyed with the monopolar current with practically no morbidity. In several instances in this group the polyps of the lower sigmoid colon that were too small to be demonstrated by roentgenograms were later seen by repeated x-ray studies. In 10 or 12.6 per cent of the patients the lesion was demonstrated by both x-ray and sigmoidoscopic examination.

With the use of the barium enema and double contrast technic of examination, polyps of the colon above the reach of the sigmoidoscope can be readily diagnosed if they are searched for carefully. The roentgenologist diagnosed polyps in 52 patients or 65.8 per cent of this group. To visualize these lesions an adequate preparation of the bowel is required. First, the patient is instructed at the time of an appointment to cleanse the rectum with enemas preceding the office visit for sigmoidoscopy. If x-ray studies of the colon are indicated, the patient is given written instructions for a liquid diet for 24 hours preceding the examination, 60 cc. of castor oil the night before and one enema in the morning of the x-ray study. I have found this to be the responsibility of the proctologist. Double contrast air studies of the colon are mandatory when a polyp is visualized on sigmoidoscopy. If presenting symptoms are indicative of a polyp, repeated x-ray studies may be required to establish a diagnosis. Frequently polyps are found proximal to a malignant lesion; and if the proximal colon cannot be examined because of the obstructing tumor, then complete studies must be done after the tumor has been resected.

Malignant changes were found in 19 patients or 24 per cent in this series. The only death from carcinomatosis was in a 15 year old boy who presented himself with a six weeks history of abdominal pain and rectal bleeding. X-ray examination showed a sessile sigmoid polyp. A radical anterior resection was done. Many mesenteric lymph nodes showed metastatic carcinoma. He died 3 years following operation with generalized carcinomatosis. It is of interest to note that after the age of 30 the incidence of malignancy was 28 per cent. The three patients over 70 years of age showed malignant lesions. Of this group there were 7 females and 9 males with carcinoma of the colon.

Treatment

For 7 days preceding surgery the patient is restricted to a low residue diet and for 5 days receives succinylsulfathiazole, 0.25 Gm. per kilogram of body weight each 24 hours. Terramycin, 250 mg. every 6 hours, is begun 48 hours before operation. The patient is restricted to a liquid diet during this period of 48 hours. An enema* is given the evening before surgery.

At operation an effort is made to identify the base of the polyp, and the colon is opened longitudinally on the antimesenteric border. If the polyp is pedunculated it is excised with the adjacent mucosa. The defect is then closed. The colotomy incision is closed transversely with two rows of interrupted sutures. This technic was used on 56 patients or 70.9 per cent. The polyp from one patient removed in this manner was reported as benign on frozen section but later was found to be malignant on permanent section. Seventeen days after the first operation an anterior resection was done, and 6 years later the patient had no clinical evidence of recurrence. Frozen sections of tissue are not dependable in making a diagnosis of malignancy in polyps. The surgeon must often rely on the gross pathology at the time of surgery. The consistency and the appearance of the tumor and the presence of enlarged regional lymph nodes are helpful aids in differentiation. When the lesion was sessile, or showed malignant degeneration and was noninvasive a limited wedge resection was done. This procedure was performed in 8 patients or 10.2 per cent. When the lesion was microscopically malignant with local or with regional lymph node metastasis, a radical segmental resection was done. This group included 14 patients or 17.9 per cent. The only major postoperative complication was an evisceration in a 77 year old man following colotomy of the left colon for a malignant pedunculated polyp. Secondary closure was done. The patient died 6 years later, at the age of 83 years, of cardiovascular disease. There were no postoperative deaths. One 15 year old male, as noted before, died 3 years postoperatively of

*Fleet's Phospho-soda

carcinomatosis. He had positive lymph nodes at the time of surgery. All of the other patients are alive and well at present without clinical evidence of recurrence except for five who died from cerebrovascular accident.

Discussion

In the patients having polyps, bleeding was the predominant symptom which caused them to seek medical advice. It was noted in 80 per cent of the patients in this series. Other symptoms which may result from polyps of the colon are: feeling of incomplete evacuation, the urge to defecate, abdominal pain, obstipation, symptoms of obstruction and passage of clear fluid. The latter symptom is not infrequently the only symptom and is always associated with the villus type of lesion. This lesion is most commonly seen in the rectum but does occur in the colon. Therefore, evaluation of the entire colon must be made in those patients with this symptom.

In some patients with a history of bleeding from the rectum, the source of the bleeding cannot be visualized. These patients should have x-ray studies using the double contrast technic. If no lesion is demonstrated reexamination should be done in one week. In a few patients in this series repeated examinations were necessary to demonstrate the polyp.

If polyps are allowed to remain long enough, they invariably develop malignant changes. In this series 24 per cent of the patients had malignant polyps. All polyps should be removed as a prophylactic measure against cancer of the colon. The prognosis for patients with polyps of the colon is excellent when these lesions are removed prior to malignant changes and local invasion. Only one patient in this series died from metastases from carcinoma of a polyp.

Summary

1. This report presents a study of 79 patients with adenomatous polyps of the colon excluding those of the rectum.

2. Bleeding was the most frequent symptom and was present in 80 per cent of the patients.

3. In this series, 48.7 per cent of the patients having polyps of the colon were diagnosed by sigmoidoscopic examination. I feel that sigmoidoscopy is one of the most important examinations in the diagnosis and prophylaxis of cancer.

4. Sigmoidoscopic and x-ray double contrast studies should be carried out in all patients in whom a polyp of the rectum or colon has been found. Multiple lesions were found in 17.7 per cent of the patients in this series.

5. Simple excision of a pedunculated polyp is adequate if the pedicle is removed with its base. Wedge resection is advised for benign sessile lesions. Radical resection must be carried out if there is local neoplastic invasion or metastases to regional nodes.

6. The prognosis is excellent in patients having benign polyps and in those in whom local noninvasive malignant changes have taken place in the polyp.

7. In no other branch of surgery can cancer prophylaxis and treatment be so successfully carried out as in the excision of polyps of the colon.

Bibliography

1. Dorn, Harold F., and Cutler, Sidney J.: Morbidity from Cancer in the United States, Pub. Health Monograph No. 29, U. S. Department of Health, Education and Welfare, July, 1955.
2. DeMuth, William E., Jr., Cherney, Paul J., and Fitts, William T., Jr.: Adenomatous Polyps of Colon and Rectum, Surg. Gynec. & Obst. 94:195, 1952.

Discussion (Abstract)

Dr. Francis J. Burns, St. Louis, Mo. In a study of the literature related to this general topic, there seems to be little doubt that many malignancies of the colon and rectum originate in a pre-existing adenoma. Helwig, Buie and Rankin, men with considerable knowledge in this field, believe that most colonic cancers originate in polyps. This has been emphasized by Dr. Smith. Most polypoid tumors of the colon and rectum are adenomas, and the great majority of those which are not adenomas, are papillomas.

In a personal series of over 300 patients with polypoid lesions of the colon and rectum, there were 35 patients with polyps in the colon. Of this number, 15 (or 44 per cent) presented signs or symptoms, the most common being bleeding, and 14 (or 41 per cent) were diagnosed by means of the sigmoidoscope. In 11 cases (or 32 per cent) malignant changes were found in the tumor. These figures more or less parallel those of Dr. Smith's series.

Most surgeons agree that all adenomas should be eradicated, and certainly there is much evidence to support this reasoning. I have operated on several patients, when the clinical evidence was strong enough, and have found adenomas, despite several completely negative examinations by x-ray. By the same token, I have operated on a few patients, and have not found any tumors, when x-ray studies indicated their presence in the colon. Because 25 per cent of cases have more than one tumor, a thorough inspection of the colon should be performed at the operating table, using a sigmoidoscope through either 2 or 3 colotomy open-

ings. Small adenomas are apt to be overlooked otherwise.

In conclusion, I heartily agree with Dr. Smith, that the best method of prophylaxis for cancer of the colon and rectum lies in the eradication of polypoid lesions, most of which are adenomas.

I am appreciative of the opportunity to discuss this fine paper by Dr. Smith.

Premature Ejaculation: A New Approach*

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This is a complaint which the urologist hears from his patient. The internist hears it not uncommonly from a wife. In any event it has offered a problem difficult of solution. Here is a new suggestion for treatment that seems to have merit.

IN PRIVATE PRACTICE, most patients with premature ejaculation and related impotence come or are referred to the urologist. This is understandable since the male is reluctant to admit that his difficulty is other than organic. His alternate choice is a visit to the psychiatrist or marriage counselor. The urologist is selected as the specialist most acceptable to the patient who feels well otherwise.

For many years the treatment of premature ejaculation and the periodic impotence related to it has been far from satisfactory. Improvement is only equivocally related to the instrumentation and medication used.

In my experience a different method of treatment which prolongs the localized neuromuscular reflex mechanism of ejaculation has proved to be more often and permanently effective. Hirsch,[1] in 1948, described a technic for postponing ejaculation, to be used early in marriage. However, it is not feasible as a method of treatment for extreme cases of premature ejaculation.

In patients with premature ejaculation the reflex mechanism is abnormally rapid, and penile stimulation ends in ejaculation before the maximum response is experienced by the wife. Premature ejaculation is very undesirable for the husband since it may lead to actual sexual impotence following repeated episodes. Erections may occur, for example, in the morning but not at the time of coitus. The wife also reacts unfavorably, describing a feeling of nervous tension after coitus instead of the feeling of relaxation obtained normally.

The procedure recommended for prolonging the localized neuromuscular reflex mechanism of ejaculation is extravaginal stimulation of the penis during erection until the sensation premonitory to ejaculation is experienced by the patient. This sensation is readily recognizable to him as localized in the glans and corpus spongiosum. Stimulation is then interrupted until the sensation has disappeared. Penile stimulation is repeated until the premonitory sensation returns and then is again discontinued. Subsidence of erection may, or may not occur temporarily. By repeating this procedure the response of ejaculation becomes no longer premature; that is, it can finally be delayed indefinitely until female response has begun or is complete.

Differential Diagnosis

An adequate history is essential to rule out the impotence of organic cause, for example that following severe fracture of the bony pelvis and rupture of the membranous urethra, or recent prostatic surgery. Psychiatric symptoms related to sexual activity, such as hatred and fear are also contraindications to use of the method described. If these symptoms are present psychiatric management is recommended, and no further advice is given

*Read before the Section on Urology, Southern Medical Association, Forty-Ninth Annual Meeting, Houston, Tex., November 14-17, 1955.

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by the urologist until such symptoms have been eliminated.

If the history reveals that the difficulty is not psychiatric or organic in etiology, the patient should be reassured that premature ejaculation can very probably be eliminated on the basis of the history given.

If the wife is available she will want information from the doctor concerning her husband's difficulty. Her cooperation is often essential, and is always desirable in the successful management of these complaints. If she does not elect to visit the urologist an accurate history may not be obtained. The urologist may miss a contraindication for using the method of treatment and see it fail without realizing the cause.

The wife has cooperated in coming at the time of the second interview with the patient in all instances in which no further history or discussion beyond that just mentioned has been continued at the time of the first visit. The reluctance of a wife to come at first for any purpose except to hear the cause of her husband's difficulty must be realized and accepted by the urologist. However, in our experience, after personal rapport has been established in the presence of the wife by the urologist, further history is easily obtained. It is for this reason that it cannot be too greatly stressed that all further history, or explanation of the method of therapy to the husband must be deferred until the wife is interviewed in person by the urologist in his office.

After the wife has been admitted to the office without her husband she is told that the premature ejaculation, as based on the history given by him, can very probably be corrected. She is then asked for her interpretation of his difficulty. It is our experience that at this time any unsuspected complicating emotional incompatibility between man and wife will be revealed. Also, under these circumstances, there has been no reluctance on the part of the wife to hear or discuss the details of the technic used in postponing the reflex of ejaculation.

Clear instructions in words comprehensible to the layman are essential. The same words are used to describe the technic in each of three interviews,—that is, with the husband and with the wife alone, and lastly in the presence of both. Her almost certain unfavorable emotional reaction to her husband's premature ejaculation assures the urologist of her cooperation in eliminating this complaint by the method recommended.

Technic

Each partner is told in private interview that the attitude of husband and wife toward sex is properly entirely different from that maintained by the adolescent or unmarried individual. Therefore, the instructions given for the purpose of eliminating premature ejaculation are not to be related to any previous information or misconception they may have had toward sexual matters.

If fatigue is present in either partner, he or she should sleep for a brief period of time. After this love play is begun and progresses to mutual stimulation of the penis and clitoris. Each is instructed to inform the other of the stage of sexual excitement being experienced. When the husband feels a sensation which is, for him, premonitory to ejaculation, he informs his wife and removes her hand until the sensation disappears. Stimulation is begun again and interrupted by the husband when the premonitory sensation returns. If ejaculation accidentally occurs, further efforts are postponed until later, except for clitoral stimulation by him, which is continued until the maximum female response is obtained. This latter is essential if continued cooperation of the wife is to be expected.

By continuing the technic described above ejaculation can eventually be postponed indefinitely. Both husband and wife are advised that if erection subsides more than temporarily, a brief sleep or postponement of further stimulation is to be preferred to continuing their efforts at that time.

Next, each is told separately, and later together, that ejaculation occurs more rapidly with the penis wet than dry. It is necessary, therefore, to use a bland cream or other means to lubricate the penis while the procedure is repeated. After the penis has been able to tolerate indefinitely stimulation while wet, it can be expected that the moist surface of the vagina will no longer produce premature ejaculation.

The patient and his wife should be seen again after a few weeks. This is an important

visit to evaluate the progress. Separate interviews with the wife and husband at this time provide an opportunity to discover whether instruction has been inadequate or misunderstood. The technic must be remembered to be used. The wife remains the more reliable source of information concerning her husband's progress.

Discussion

Eight patients have been selected for this report because of adequate follow-up. Cases complicated by psychiatric or organic factors were not included. For example, one patient with possible heart disease developed pleural effusion, and coitus was considered contraindicated by the internist. Four more patients could not be followed. In one patient treatment had to be discontinued after the diagnosis of schizophrenia was made by Dr. Leslie B. Hohman.

The average total time of interview for each of six cases was three and a third hours.

Case Reports

Case 1. *(Office No. 01605)* H. B. G., a 25 year old man, complained of premature ejaculation and intermittent impotence since the beginning of his marriage six years previously. He stated that he had had successful premarital coitus. The history obtained from the patient and the physical examination were otherwise noncontributory.

He was asked to request his wife's presence at the office for the purpose of discussing his difficulty. It was recommended that no further detail of his first visit should be related to her until she had met his physician.

The wife was told during her first interview that her husband's complaint, on the basis of the history and physical examination, was not organic, but physiological and emotional. Her cooperation was requested not only in completing the history but also in retraining the husband and herself in the physical performance of their marital relations.

Comment. This fact was impressed on the wife because it had been found that the husband alone frequently failed to make the association between sexual potency and such disorders as emotional fatigue and resentment. With both husband and wife informed and cooperating, a therapeutic result was obtained more rapidly.

The wife stated that she had been told by the patient that she was cold. He referred to sexual experiences during foreign military service, saying that he had not had premature ejaculation then. She accepted her husband's decision that she was a frigid woman.

The interview with the wife also revealed that she had been reared in a home occupied by her mother and one sister. There had been no father since early childhood. Male callers had been discouraged and sexual education avoided. She stated that she married because her friends were being married.

After further discussion with the wife it was revealed that her only corporal areas of sexual response were the flanks and vaginal lining. Clitoral stimulation produced no pleasurable sensation. She had always had a reaction of fear during coitus.

The husband was advised that marriage changed any preconception he might have had concerning the male role in coitus, since the reaction of the wife had to be considered separately in each marital relationship. He was also told that any one marital partnership might necessitate its own pattern of sexual behavior. Therefore, in his individual situation, since fear affected his wife's attitude during coitus, it was necessary that he behave passively, until his aggressive attitude was equaled by that of his partner.

The husband was strongly advised to rid himself of any adolescent taboo concerning extravaginal manipulation of the penis. His premature ejaculation was formulated to the patient as showing the need of reducing the sensitivity of the penis to stimulation, so that intravaginal friction would not release ejaculation prematurely. To accomplish this the wife was instructed to stimulate the penis manually, first without and later with lubrication, stopping as soon as a premonitory sensation of ejaculation was felt by the patient. He was then to put her hand away until this disappeared. It was explained to the wife that this was not rejection. After repetition of this part of the technic, he was to expect increasing tolerance to penile stimulation, unless discontinuance came too late, in which case the procedure was to be repeated on some other occasion after manual clitoral stimulation had brought the wife through climax. After the patient was able to tolerate prolonged manual stimulation with the penis lubricated, vaginal insertion was to be carried out.

Recommendations were made to each partner separately. Next, they were repeated in the presence of both together. It was also stressed that further visits were mandatory, if permanent relief was to be obtained.

The next visit occurred one month later. The couple reported that there had been relief from the complaint of premature ejaculation following the previous interview. There was one episode of impotence associated with an attack of severe painful pharyngitis during the previous week. This disappeared spontaneously.

Both partners were seen again after three months. There had been no consistent impotence since the last visit. Relatively slow progress in the arousal of the wife's sexual response was the chief complaint. They were reassured that elimination of this difficulty might be expected to be slow, because of the wife's childhood inhibitions concerning sex.

Case 2. *(Office No. 01639)* L. Z., a 30 year old male I. B. M. salesman who had been married seven months, complained of premature ejaculation followed by coital impotence. Interview with his wife revealed that she had never had sexual climax during her marriage of seven months' duration. She had lost

interest in coitus. Her husband did not realize that love play was important in this regard. After the instruction described in the previous case, premature ejaculation disappeared five weeks after he was first seen, and had not returned after eight months.

Case 3. *(Duke Hospital No. D 97817)* W. E. H. was first seen on October 9, 1954. The complaint was premature ejaculation and subsidence of erection. He was a 47 year old white man who had been married 20 years to his present wife. There had been no previous marriage.

It was revealed that the patient was consistently reminded by the wife that in her opinion vasectomy was the cause of his impotence and her consequent failure to reach climax. The patient's first request was re-anastomosis of the vasa. After a three and a half hour interview both the patient and his wife were convinced that vasectomy does not produce impotence.

They were then instructed in postponing the ejaculatory reflex by mutual manual stimulation of the penis and clitoris. Six weeks later when they were seen again premature ejaculation had disappeared.

The day following the first relief from premature ejaculation, unintentional ejaculation occurred during love play. The husband followed instructions and manually stimulated the clitoris until climax. This was successful in satisfying the wife. Because of their chronic fatigue sleep was often necessary to eliminate drowsiness before attempting coitus. This was considered a good result on the basis of inquiry made two months later. One year later, the patient had continued to be free of premature ejaculation.

Case 4. *(Duke Hospital No. D 85194)* V. H., a 30 year old white man, complained of difficulty in maintaining erection. Of importance was the history, obtained only from the wife, that she had never remembered reaching climax during coitus. Marriage had occurred two months before.

It was significant that the patient believed that partial paralysis of the legs, caused originally by meningitis at the age of 5 and necessitating the use of a cane for ambulation, might have contributed to his sexual disability. He was reassured that this was an incidental and unrelated finding.

The patient was told that the fact that he had not only erections, but sexual sensation and ejaculation showed that his disease of the spinal cord had produced no damage to the nerves involved in coitus. Both partners were instructed in prolonging the ejaculatory reflex in the husband and providing sufficient love play to the wife at the same time.

When re-examined two months and again five months later, the erections were satisfactorily maintained, and clitoral stimulation, which had brought no pleasure at first, began to be definitely more effective. Premature ejaculation had disappeared for the first time after two months.

Follow-up 15 months later revealed that pregnancy had occurred for the second time, the first product of conception having been lost by spontaneous abortion.

Case 5. *(Duke Hospital No. A 27492)* J. K., a 39 year old married man, was first seen on January 21, 1955, complaining of premature ejaculation and some loss of potentia.

In 1944, the patient had had an automobile accident, following which he claimed that his potentia had decreased markedly. However, the hospital record showed that he had consulted the Division of Urology in 1939, before the accident occurred, because of premature ejaculation and weak erections. Therefore, the history of the automobile accident was considered probably incidental and noncontributory to the present complaint.

Psychiatric consultation, on January 10, 1955, at Duke Hospital introduced a diagnosis of depressive psychoneurosis. Considering the possibility that reeducation of both the husband and wife in the technic to eliminate premature ejaculation might produce a satisfactory physical relationship and shorten the course of the patient's mild depressive reaction, both partners were instructed in prolonging the ejaculatory reflex.

Prior to instruction, coitus had decreased from two or three times a month to once a month. When seen 10 months later the patient was having coitus two to three times each week, with satisfaction to both partners. Shortly before this visit, however, the patient's depressive reaction had returned, and his wife ceased once more to reach her climax regularly. Consultation with the psychiatrist, Dr. Leslie B. Hohman, resulted in the decision to withhold further recommendation until the depressive reaction had completed its course.

Comment. This represented temporary improvement, but also emphasized that a differential diagnosis between the emotional effect of premature ejaculation and actual emotional illness was important. No further recommendation concerning potentia was proposed until the patient had returned to a nondepressive state.

Case 6. *(Duke Hospital No. D 95239)* R. R. complained of premature ejaculation followed by recent inability to have an erection. He was a 36 year old white man who was married at the age of 20. He still had strong spontaneous erections when awakening in the morning. He had practiced coitus interruptus.

Since his wife was not available, he was carefully instructed in the technic of postponing the ejaculatory reflex by mutual manual genital stimulation between him and his partner. He returned after two months, stating that the potentia at the time of coitus had returned and that his partner no longer had failure in reaching climax. He had tried this on frequent occasions with success.

Case 7. *(Office No. 01331)* T. M. B. was a 42 year old dining car waiter who complained of premature ejaculation and diminution and loss of power of erection when he was first seen on August 14, 1951. He had been divorced on two occasions. Interview with the wife revealed that the patient had a great deal of anxiety, explained by him as fear of infidelity because of adultery on the part of the wife during two previous marriages.

Both partners were carefully instructed in coitus. When seen one month later and again at eight weeks, the premature ejaculation had been absent since the

fourth week after instructions were given. There were no psychiatric symptoms in this case before treatment, other than mild suspicion on the part of the husband.

Case 8. *(Office No. 01671)* W. S. F. was a 29 year old man who was first seen on October 9, 1952, complaining of premature ejaculation during five years of marriage. Because of his premature ejaculation and her failure to reach climax the wife had lost her desire for coitus. This was first brought out in the interview with the wife.

Instructions in the technic used to prevent premature ejaculation were given to both the husband and wife. They returned after five weeks to say that the premature ejaculation had disappeared. This represented an excellent result in a marriage in which there had been no mutual gratification over a period of five years.

Summary

A method of treatment by which the localized neuromuscular reflex mechanism of ejaculation is altered to eliminate premature ejaculation is described in detail. Since impotence in these patients is often related to premature ejaculation, the same method is used in the management of both complaints. Organic or psychiatric etiologic factors comprise contraindication for this method.

The importance of cooperation by the patient's wife and a means of obtaining it is described. Separate interviews followed by a joint interview with both husband and wife are necessary at each visit.

The essential parts of the technic are:

1. Manual stimulation of the penis until sensation premonitory to ejaculation is felt by the husband. Stimulation is then discontinued.

2. Continuance of (1) after the premonitory sensation has ceased.

3. Repetition of (1) and (2) until the period of stimulation without ejaculation lasts indefinitely. Accidental ejaculation is followed by continuance of clitoral stimulation until maximum response is experienced by the wife. Repetition of steps (1), (2) and (3) is postponed until some other time.

4. After unlimited stimulation of the dry penis is tolerated without ejaculation, steps (1), (2) and (3) are repeated with the penis lubricated by a bland cream or other means, in order to simulate the moist surface of the vagina.

5. Sleep is indicated if fatigue prevents cooperation by either the patient or his wife in application of the technic.

6. The above instructions should be repeated in the presence of the man and wife separately, and later together.

7. Both the patient and his wife should be interviewed after a few weeks for assurance that the instructions have been adequate and understood by both.

8. Normal coitus without premature ejaculation can then be expected.

Bibliography

1. Hirsch, Edwin W.: The Power to Love, New York, Citadel Press, 1948, pp. 222-224.

Discussion (Abstract)

Dr. Berneil W. Andrews, Kansas City, Mo. Dr. Semans is to be congratulated upon bringing to our attention a subject which is so often neglected by the medical profession, but one which is of the utmost importance to the patient complaining of premature ejaculation. My experience in the treatment of this condition has been rather limited and for this reason my contribution in discussing this topic is small.

In some cases of premature ejaculation this problem has reached the stages of divorce proceedings which could have been prevented with proper treatment and understanding.

I would like to point out that Dr. Semans stresses the importance of devoting adequate time to both the patient and his wife. It is necessary to obtain a very thorough history as well as a complete physical examination. It is my feeling that all of these patients complaining of premature ejaculation or impotency should have a thorough endoscopic examination to rule out organic disease. If there is granulation tissue about the veru montanum or a granular posterior urethritis light fulgeration might be useful, taking precaution not to injure the veru montanum, yet completely destroying the pathologic changes in the gutters along each side of this structure. If the patient has a prostatitis this should also be treated. Premature ejaculation is probably a combination of psychic and somatic factors which needs considerable untangling and re-education of sex patterns.

Schapiro divided premature ejaculation into two categories: (1) those caused by exhaustion and is usually associated with erectile insufficiency or is a sexual hypotonus; and (2) premature ejaculation associated with increased tension and emotion and referred to as hypertonus of the sex apparatus. He suggested treating the first type with stimulants while those with sexual hypertonus should be treated with sedatives.

The results which Dr. Semans has had in the management of his cases proves its value as a type of therapy and I for one will be anxious to try this new approach in the treatment of my patients.

Dr. A. J. Ashmore, Corpus Christi, Tex. Dr. Semans has presented to us an encouraging report on a very perplexing condition, which is certainly timely, since

there has been very little written on the subject in the last several years.

Walker and Strauss in their book, *Sexual Disorders in the Male,* published in 1948, say: "There are three causes for premature ejaculation: (1) psychosensorial and coordinating function; (2) the nerve path of the emission reflex, and (3) the urethra and its nerve endings.

Dr. Semans has given us a method to prolong the neuromuscular reflex mechanism. Since my first communication with him, I have started this treatment on three patients with surprisingly good results, and complete cooperation of the female partner.

I want to thank Dr. Semans for the privilege of this discussion. As time goes on, I am sure our results will be very gratifying.

Psychogenic Factors in Infertility and Frigidity*

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Long standing infertility corrected not infrequently by adoption of a child offers an interesting area of speculation as to psychiatric causes. The interpretation of frigidity in psychiatric terms is on much firmer ground.

STERILITY AND FRIGIDITY ARE FIRST GYNECOLOGIC PROBLEMS, and those patients with a demonstrable anatomic or endocrine basis for their infertility or frigidity are not included in this discussion. Since these two problems, although related, may be distinct, they are considered separately.

Infertility

The medical literature on this subject falls rather generally into two portions, with one written by gynecologists, and the other by psychiatrists. There is a tendency for the disciplines to merge in the unexplained areas with the psychiatrist generalizing on ovarian function, and the gynecologist explaining unconscious motivation. Psychiatrically there is no clear-cut deliniation of a "personality" for the sterile woman which would be recognizable premaritally. Wittkower and Wilson's[1] statement that one main characteristic of sterile patients is a "self-centeredness and lack of warmth in their social and personal relations" seems one of the clearer descriptions of the reactions of those who are infertile. As children, they were further described as being ailing, timid, unsociable, and devoid of self-assertion.

From this it might be presumed that one group of patients destined to infertility were shy and socially withdrawn as children, and that they carried this same pattern into maturity and marriage, their "self-centeredness and lack of warmth" being more an inability to show affection than an absence of feeling. Surely such patients are seen who are lacking in self-confidence, who are infertile and who may develop an anxiety reaction upon merely considering adoption of a child. Lacking confidence in themselves as wives they fear pregnancy and the responsibilities of motherhood. If such a wife adopts a child and gradually acquires self-confidence through her own efforts and experience, and becomes somewhat self-assertive because of the child, she may be one of those who become fertile following adoption.

Those patients who desire and need children may become more secure after adopting a child and may lose their anxiety and tension as their self-confidence increases. This lack of tension and decreased concern over their competence should increase their fertility and pregnancy would appear more likely to occur. Such a patient might also be more infertile immediately after the child

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entered the home until the added anxiety over the increased responsibility had been resolved; if she is unable to overcome her fears of the child, then the adoption should make her chances for pregnancy even more remote.

Another group of infertile women are superficially the opposite of the shy type. This is the "career woman" (a generalization which includes any female who competes more comfortably and successfully with men than with women). These patients, after marriage, continue to be self-assertive, somewhat domineering, and quite capable of running the home as well as their jobs. These women live very orderly, well-organized lives; they are inclined to rigid schedules into which they fit the husband or husbands. Maritally the relationship may be that of two people living separately in a very well-run organization. She competes with her husband as well as with other men and may be more successful than he is, which he resents and she regrets, if the marriage is compatible. In appearance such women are neat and meticulous; and their work follows the same pattern and is excellent; diagnostically, they are compulsive. They are most relaxed when discussing an impersonal situation, such as their job or their "career." It follows that the sexual act, being a rather personal and necessarily informal procedure, is not well tolerated. Such people are unduly aware of themselves, and are unable to relax if there is anything disorganized in their appearance, dress or behavior.

Therefore many of these women who seek a career are merely choosing the least disturbing situation in which to exist, since they are more at ease with men than women, and in a business atmosphere than in a home. As often as not, the motivation which provokes the patient to seek or continue a career is an attempt to overcome the discomfort and dissatisfaction she experiences associating with another group of women as a housewife. They are unable to socialize comfortably, or indulge in small talk or over-the-fence gossip as most housewives do; and they may deride these interests as being pointless, uninteresting and menial, while they stress the importance and meaningfulness of their career. They are usually very serious, intent people because they are uncomfortable being otherwise. Their relationships with men are apt to be impersonal, asexual or as one man to another. Any obvious expressions of femininity (such as tears, warmth, affection or dependence) may be considered evidence of weakness. They are openly critical of the more dependent members of their sex who use their femininity to dominate or to influence a male. These patients may renounce their premarital career and focus their energy on the home; but they may not be contented in the marriage until they have acquired some outside activity or obligation to occupy the extra time which their very efficient organization of the home affords. They may bear one child and never again become pregnant.

In the patient with a career, if a child is adopted and is accepted, the patient may overcome her fears of children and the responsibility for them. She has a safe object for her affections and no alternative but to act and respond as a female, which may relieve the need for her previously rigid pattern of existence. The child may further alter her existence by affording her a common interest with other women, with an increased acceptance and satisfaction from a career as a housewife. These factors should act to increase fertility.

However, the entrance of a spontaneous, nonconforming child into such a rigid pattern of living may be devastating. Adoption may be carried out and, finances permitting, the child may be walled off from the marriage with his own area in the home and his own schedule of activities. In such a situation the infertile female does not adopt a child, she merely has another well-organized project. Such wives may also be very ill at ease with children and feel incompetent in this demand to be feminine.

A third and smaller group of infertile wives are emotionally infantile as judged by the restriction of their interest solely to their own wants. They have no actual desire for pregnancy or the responsibilities and efforts raising a child would require. Their husband's waking hours are normally spent in attendance to the needs of such a wife, who would be hard pressed to perform adequately as a mother.

However, none of these groups have characteristics sufficiently specific to attribute the cause of the infertility to their existence. Experience shows numerous exceptions who were

shy, domineering or infantile, and still became pregnant and delivered. The fact that many who are infertile fit into one of these categories is a help in clarifying their particular emotional problems.

On the presumption in those instances where pregnancy occurred in a previously sterile woman following adoption that the psychogenic influence probably arose from the presence of a child in the home, rather than from the procedure of adoption, it has been recommended that those who are infertile have a child in their home on a temporary basis. It would appear essential that the couple keeping the child should assume total responsibility. This has not yet been carried out sufficiently to form an opinion as to the validity of the assumption.

Psychogenically, it would appear that in those women who are tense, anxious and markedly concerned over their infertility, undue emphasis on this inability would only serve to increase the anxiety and thereby decrease the likelihood of their becoming pregnant. Although, physiologically, a female may be most fertile immediately following ovulation, satisfactory intercourse is seldom intellectually motivated, and the patient's most favorable emotional state for conception may not be in phase with her ovulation. This is of importance in the anxious patient who may not be too responsive at best, and if her sexual relations become a mechanical procedure which must be performed on schedule she may become frigid as well as infertile.

Observations in other areas have been made about sterility which involve psychogenic factors. It has been found that the individuals who make up a rural population are more fertile than those who dwell in cities; the poor bear more children than the wealthy; and those doing physical labor are more productive of offspring than those employed in sedentary occupations. Undoubtedly infertility is affected by such items as knowledge and the use of contraceptive devices, increased physical isolation of the individuals from each other with an improvement in their standards of living, as well as cultural pressures as to acceptability of family size. In those groups in which infertility is more frequent, bareness appears less a stigma than in the more fertile groups.

Hanson and Rock,[2] on the basis of a questionnaire sent to 202 couples who had adopted children, found 8 per cent had borne children following adoption. He then dismisses the 8 per cent by saying 10 per cent of those who are sterile experience spontaneous cures anyway; in 85 of these couples who were studied more fully, only 70 were physically capable of having children (i.e., possessed uterus, tubes, a fertile husband, etc.), and in this 70, 15.7 per cent had become fertile. A further study of couples who adopt children, with a detailed history of all the facts relevant to the patient's infertility, including the physical possibility of conception, age at the time adoption occurred, fertility and potency of husband, and the duration of the infertility would be necessary to fully evaluate the effects of adoption on sterility.

Frigidity

As in infertility this discussion of frigidity is limited to those patients without demonstrable physical cause for their difficulty. There are apparently two types of frigidity. In the primary type the patient has never experienced an orgasm, and in the secondary type the patient at some period during her married life did respond satisfactorily, but for some reason has ceased to do so.

The most frequently encountered primary type of frigidity is in the hysterical patient. In this group the inability exists as a functional loss characterized by a lack of genital sensation or "sexual anesthesia" during intercourse. Since a similar mechanism exists for this symptom as in other conversion phenomena, the disease is not in the involved organ but in the personality of the patient. The individual's anxiety is unconsciously converted into a somatic symptom which also serves secondarily to avoid any unpleasant activity, in this instance intercourse. The frigidity then is a conversion symptom which frequently becomes more fixed with attention to the complaint.

These patients show certain similarities of background and behavior. Frequently they mature early and begin to have obvious difficulty adjusting in high school, being physically precocious and being unable to fit comfortably into their own age group they may socialize with older men. They are constantly in need of attention, which by their behavior,

dress, and movement they are successful in obtaining from men and which may also make them the object of considerable hostility from other women.

In spite of their sexual attractiveness to the opposite sex, they are usually uninformed or misinformed regarding sex when they marry. This ignorance probably arises from another facet of their personality which allows them to keep unpleasant information out of their awareness. The first husband is usually in their age group and is inconsiderate, that is, he is sexually demanding. Within a year or two a divorce is obtained and the process is repeated until they find a considerate husband who is usually very attentive and is sexually very inactive. As a group they are immature and repetitiously seek reassurance by demanding attention. They readily accept, or even seek, surgery, and usually express considerable hostility if their complaint or "self made" diagnosis is questioned.

In such a girl the frigidity is only a symptom of a very basic difficulty which is not easily altered. As a group they are very suggestible and may respond temporarily to any therapeutic approach.

Another group who are primarily frigid have been painfully self-conscious all of their lives, due to their inability to form a comfortable personal relationship with other people. They are chronically anxious, easily embarrassed, and may have difficulty in being at ease around their husband if there is any possibility of sexual activity. Attempts at intercourse increase their embarrassment and anxiety; they "freeze-up" physically as well as sexually and become totally incapable of responding. In this group as well, the frigidity is only one phase of the total problem.

In the secondary type the frigidity occurs after a period in which the individual did respond. In a survey of 25 cases in which the patient ceased to respond after a previously satisfactory adjustment, the predominant psychogenic factor was resentment. The most disruptive and enduring cause for resentment was the husband's infidelity. The marriage would continue, but seldom with the previous degree of harmony. There was an expected tendency for suspiciousness of the marital partner to evolve with a distrust of any behavior which was not readily explainable to the wife. The resentment and hostility were greatly aggravated by the infidelity being known to the wife's friends; this appeared of greater concern to the patient than the act itself.

In these 25 cases the frigidity was also precipitated by the husband's demanding intercourse while he was intoxicated, and being unable to adequately perform or being sexually perverse. Another cause was the husband's being impotent or having premature ejaculation, and after a period of frustration the wife would first cease to respond, and later refuse to participate. There was usually little understanding by the wife of the cause for her husband's impotence. These women frequently presumed the impotence was due to a lack of physical attractiveness on their part, evidence of an absence of love or affection, infidelity in the partner, or a deliberate effort by the husband to deprive them of pleasure. The conclusion that the impotence was deliberate created a great deal of hostility, accusation, and aggressiveness which only served to increase the difficulty.

It was also noted that argument, disagreement, or resentment in any area of the marriage was reflected in an inability to respond sexually. The persistence of a disturbing and unsettled conflict in the home could produce an enduring frigidity in the wife. The most frequent cause in these patients of such a chronic conflict was the husband's emotional dependence on his mother or family. If the mother was in the home the effects were most marked; but regardless of where the mother lived, whenever the husband failed to support the wife in a disagreement between her and his family, or was in any way more considerate of his mother than his wife, frigidity would ensue. The inability to respond paralleled the hostility, and as the disagreement and resentments accumulated, the frigidity would become total and seemingly permanent in the marriage.

Summary

Psychogenically, frigidity appears as a symptom of an underlying personality disorder of a conflict in the marriage. To relieve the symptom the etiology must be considered, and since the cause may arise with the husband, this possibility must be considered before the disability can be understood or corrected in the wife.

Bibliography

1. Wittkower, E., and Wilson, A. T. M.: Dysmenorrhea and Sterility—Personality Studies, Brit. M. J. 2:1587, 1940.
2. Hanson, F. M., and Rock, J.: The Effect of Adoption on Fertlity and Other Reproductive Functions, Am. J. Obst. & Gynec. 59:311, 1950.

Discussion (Abstract)

Dr. Hamilton Ford, Galveston, Tex. The author is to be commended for his intrepid venture into this "field of feminine inconsistency;" that is, if she is given the proper exposure, whether or not such a revolt against biology can be explained on a psychosomatic foundation. He has grouped infertility and frigidity together in the title, yet each is discussed as an entity, but perhaps rightfully so. Surely many frigid women are fertile. Some very warm, affectionate women are infertile but the percentages for successful conception favor the latter group.

Similar unconscious and situational conflicts can contribute to both frigidity and nonphysical infertility. Silverman summarized a galaxy of emotional disturbances which may be the underlying cause of frigidity and describes many factors which Dr. Smith considers under psychogenic infertility. For example, a fear of disapproval or punishment which results from a childhood home atmosphere devoid of signs of parental love and affection, or over rigid training which teaches that sex is degrading and improper, may prevent a full heterosexual growth. This may be intensified if the young couple live with the parents and, as pointed out by the author, even more so if the husband has not emancipated from his mother, or if the wife maintains strong identification and resentment toward her mother. Hostility toward the masculine role, encompassing the competitive strivings with the male as exemplified by that product of our modern culture, "the career woman" contributes to frigidity. I wish to ask the author his opinion on the frequency of latent homosexuality as a significant factor in the cause of frigidity or infertility.

Likewise, true or primary frigidity is often just one other symptom of a neurotic character or a specific psychiatric illness. The loss of sexual drive, among other symptoms, that occurs in a patient with a simple depression is a good example. Frequently this symptom of the illness, called secondary frigidity by the author, is regarded as the primary cause; however, it disappears completely with proper treatment of the depressive illness. I make this point to emphasize Dr. Smith's thesis, namely, the common denominator in either of these psychosomatic manifestations is the involvement of the total personality of the patient, including all facets of the character structure and development.

The etiology of psychogenic infertility has been considered. One presumes it does exist, since there are authenticated reports of "cures" by psychotherapy, plus the well-known experience of adoption of a child being followed by successful conception in the new mother. It would be far easier to accept the validity of this concept if there were documented proof instead of postulates to explain the psychophysiological mechanisms which prevent a healthy, eager sperm from uniting with a receptive ova.

A check of a not too voluminous literature on the subject, ascribes failure of conception to the effects of anxiety which alter vegetative and neuro-endocrine functions and in turn either effect the ovarian cycle with production of immature ova, cause spasm of the fallopian tubes, or the production of a highly alkaline vaginal secretion. Certain authors believe that resolution of conflicts through psychotherapy or, in some cases, by adoption of a child is followed by psychogenic relaxation which permits ovarian function to become normal, tubal spasm to disappear and the pH of the vagina to shift from an alkaline to the normally acid state. While this makes sense, it is more of a presumption than a fact.

The question of psychogenic infertility is so complex that suspected cases should be studied by the family physician, the gynecologist, and the psychiatrist, working as a team.

I wish to thank Dr. Smith for the opportunity of discussing this very good paper.

Dr. Milton Finney, Houston, Tex. Sterility and frigidity are gynecologic problems, usually first presented to the gynecologist. Inasmuch as he sees the problem possibly early in its inception, he may be able to help in relief of the symptom.

Sterility and true frigidity (Dr. Smith's primary frigidity) are usually based on deep-seated anxieties and fears often present from childhood and not in the patient's consciousness. The most common causes of the unconscious fears are: (1) severe taboos regarding the sexual organs and their functions; (2) ambivalent feelings toward pregnancy, children, husband and mother; (3) emotional immaturity and dread of responsibility; (4) feelings of inadequacy; and (5) resentment of the female role.

Therapy, especially in cases of pseudofrigidity (or secondary frigidity) is aimed at the relief of fears and anxieties, conscious and unconscious, and the influence they exert on the patient. There should be encouragement of an expression of these by the patient whenever possible, with discussion of the origin of these fears. Common types of conflict which are amenable to superficial therapy are the following:

(1) Based on a lack of satisfaction, with resulting tension, when women fail to receive gratification from their early coital attempts. This creates a feeling of inadequacy, a feeling of inferiority, thus establishing a vicious cycle. It may help these patients to learn that a gratifying sexual life is rarely the result of the first few attempts.

(2) Conflict may be caused by the atmosphere and environment in which intercourse occurs. The woman may lack a feeling of complete security, as an example, two families living under same roof.

(3) Another source of conflict may arise from personal habits of the partner, such as matters of cleanliness, or a desire for sexual experimentation which the woman may feel are "abnormal."

(4) Fear of pregnancy. This is often seen after difficult labors and trying periods with the new baby, when the patient associates intercourse with the cause of all her pain, fatigue, anxiety and loss of freedom (postpartum frigidity).

Dr. Smith (Closing). I think latent homosexuality may certainly be a factor in some cases of frigidity, but not in the majority. The cause of secondary frigidity may be a reflection of an inability to perform the sexual act in the patient's spouse, and in such an instance the wrong individual is being treated.

Ascites*

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Though our knowledge is still incomplete relative to some of the details in the pathogenesis of ascites, a review such as this brings our thinking up to date.

"I HOLD IT AN EXCELLENT THING for the physician to practice forecasting . . . and discover and declare, the present, the past and the future and fill in the gaps in the account given by the sick . . ." These thoughts by Hippocrates in "Prognostica" prompted the chairman to choose a common well-known clinical finding, namely ascites, and attempt to understand it better by reviewing some of the past and present concepts of the mechanism of its production, hoping thereby to reduce the confusion which has been festooned about it.

The word ascites was derived from the Greek word Askos, meaning a bag and the term was introduced in 1398 by Trenisa.[1] As far back as 1500 B.C., the Egyptians[2] cited cases of liver disease associated with excessive amounts of abdominal fluid, and Erasistratos,[3] in 250 B.C., noted ascites with firm liver. Celsus,[4] in 20 B.C., recommended abdominal paracentesis for the removal of abdominal fluid and this procedure remains in common usage today. Paul[5] in the 7th century treated ascites by slowly removing the abdominal fluid through a copper tube.

Harvey,[6] in 1616, reported 11 cases of diseased liver describing them as a "russet, hard or contracted almost bloodless organ" and he stated that many were associated with dropsy.

Payne[6] in 1626, described the case of "a German nobleman, of intemperate habits, who suffered for three years from jaundice and was found to have a hardened liver—with dropsy of the belly and scrotum." He suggested that the morbid anatomy was probably due to alcoholism.

There are many references to intractable ascites in the medical and lay literature such as this one which appeared in *Life* which was copied from a tombstone in Kensington, New Hampshire.

> "In Memory of Benjamin Rowe Esq.
> Who after a life of great usefulness
> and patiently enduring 4 years illness
> with a Dropsy underwent the operation
> of Tapping 67 times from his Body was
> drawn 2385 Pounds of Water quietly
> Departed this life the 28 day of March
> Anno Domini, 1790 in the 71st Year of
> his Age."

His son was a physician and kept the statistics.

In 1907, Grenet noted the lowering of plasma proteins in hepatic cirrhosis but did not suggest its significance in the production of ascites.

The development of ascites is basically due to excessive movement of fluid from the capillaries into the peritoneal cavity. The blood pressure within the capillaries tends to force fluid out of the vascular compartment and the osmotic pressure of the proteins in ascitic fluid as well as in the interstitial fluid tends to draw it out of the vessels.

In normal persons there are about 100 to 200 cc. of fluid within the peritoneum. Starling's[7] thesis suggests that this fluid is of intracellular origin and its formation and absorption (which equalize each other in normals) depends upon the permeability of the capillaries and the oncotic pressure of the blood. Most absorption takes place through the venous end of the capillary bed, to which any increase of venous pressure is usually transmitted; it is at this point that edema will most likely occur.

Experimental Studies

The accumulated evidence suggests that extensive ascites is most often the result of hepatic cirrhosis, and because of this, most of the experimental effort to understand the pathologic physiology has been directed to the ascites associated with cirrhosis.

Experimentally, ascites can be produced by

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many methods. It can be caused by introducing a variety of solutions into the abdominal cavity. Experimental hepatic congestion will result in sustained ascites, and as early as 1669 Richard Lower[8] accomplished this by ligating the inferior vena cava above the diaphragm. In 1921, Bolton[9] noted the occurrence of edema and ascites when there was pericardial constriction and obstruction of the inferior vena cava.

McKee[10] and his co-workers produced ascites by applying constricting aluminum bands to the inferior vena cava just above the hepatic vein, thereby reducing the lumen about half. Many others have employed this latter method utilizing various materials such as cellophane, polyethylene, etc., to narrow the thoracic portion of the inferior vena cava.[26] Dogs usually develop ascites within 2 to 3 weeks which persists for several months and then most often will disappear spontaneously. Interestingly, these "ascitic" dog preparations show little evidence of impaired liver function, and if portal hypertension occurs it is only transitory.

When ascites has been established in the experimental animal there is a rapid passage of plasma protein into the ascitic fluid and this is known as "internal plasma-pheresis" (McKee[11] and associates). By means of radioactive tagged plasma protein, it has been shown that there is a complete turnover of ascitic fluid albumin in about 48 hours. Globulin exchange is less.

Prentice[12] and associates using tritium labeled water in ascitic patients estimated that from 40 to 80 per cent of total ascitic fluid volume enters and leaves the peritoneal cavity every hour.

Factors Influencing the Formation of Ascites

1. *Portal hypertension.* Increased filtration of fluid caused by portal hypertension occurring in hepatic disease has long been thought to be a dominant factor in the production of ascites.

Normal portal pressures in man are from 12 to 20 cm. of water, while in most patients with Laennec's cirrhosis the pressure is usually elevated to a level of about 23 to 40 cm. of water.[23] However, there may be no correlation between the height of the portal tension and the occurrence of ascites. Some patients with marked increase in portal venous pressure do not exhibit ascites, and other cirrhotics will develop marked ascites when there is no demonstrable portal hypertension. Ligation of the portal vein in man during the removal of the pancreas does not result in ascites and in animals ascites follows only if, in addition, plasma-pheresis is carried out.[26] It is probably correct to state that increased portal venous pressure is seldom the sole factor responsible for ascites.

2. *Plasma Proteins.* The blood colloidal osmotic pressure is exerted chiefly by the albumen fraction of plasma proteins and it has been often stated that seldom does ascites develop in cirrhotics unless the serum albumin is below 3.0 Gm. per 100 cc.[13] While it is true that the majority of cirrhotics with ascites have low serum albumin, in a recent review by us of 25 unselected cases, 5 patients were found to have the serum albumin exceeding 3 and two individuals in which the ascites was intractable the serum albumin was around 4 Gm. In studies of the serum proteins it was noted that there is a variation in the total serum albumin and globulin from time to time and this in no way can be correlated with the clinical course.

When fluid accumulates within the peritoneal cavity in the presence of hepatic cirrhosis it is similar to the plasma, while the fluid in the extracellular spaces seen in congestive heart failure is definitely lower in protein and is hypnotic.[14] When the level of the serum albumin is low, ascites does not always develop and conversely cirrhotics are seen who show essentially normal serum proteins and yet have intractable ascites.

An analysis of available data indicates that the role of the protein content, and hence of the osmotic pressure of the plasma or of the ascites, in controlling the accumulation of peritoneal fluid, is not clear.

Hyatt and Smith[15] conclude that the plasma and ascitic fluid levels of protein are not the primary factor in causing ascites, but that the oncotic pressure of the plasma exerts a secondary influence on the formation of ascites.

3. *Sodium Retention.* In 1905, Herringham and Hadfield,[16] from St. Bart's in London, reported that patients suffering from cirrhosis with ascites showed an abnormal slow rate

of excretion of sodium. This was confirmed later by Farnsworth and Krakusin.[17] Many observers since have emphasized the importance of the sodium ion in the pathogenesis of ascites, so that now it is generally accepted that the sodium ion exerts a potent influence on the retention of fluid within the extracellular spaces. While the mechanism of this action is not clearly understood, it is likely that the renal tubular resorption of sodium is the chief custodial influence on sodium and is therefore probably the governing influence on retention of this ion.

4. *Antidiuretic Hormone.* The posterior pituitary secretes a hormone which delays water excretion and, according to Verney,[18] the water retention which results from its action is due to its ability to control concentration of sodium. Ralli and associates[19] have shown that when ascitic fluid or urine from ascitic patients is injected into animals there is a significant delay in urinary excretion of water. This hormone probably acts directly on the renal tubules. Other observers have not been able to isolate this hormone in patients with ascites or in the "ascitic" dog.[19]

At this time the exact role that this posterior pituitary hormone plays in the pathogenesis of edema is not clearly understood.

5. *Adrenocortical Influences.* The adrenal cortex is known to exert a potent influence on the renal excretion of sodium and it has been postulated that a damaged hepatic parenchyma may fail to inactivate the hormones elaborated, which are known to have salt-retaining properties.[20] More recently, aldosterone, a potent adrenocortical hormone has been shown to have significant sodium-retaining power, and further it has been found in excess quantities in the urine of patients with hepatic cirrhosis.[21]

While the adrenal cortex is unquestionably a factor in regulating water retention and excretion and consequently in the development and retention of ascites, its influence is probably a secondary one and more study is needed to appraise its significance.

6. *Increased Intra-abdominal Pressure.* Significant increase in intraperitoneal pressure, with consequent rise of the pressure within the inferior vena cava, may exert some influence on the production and progression of ascites.[22] Diminishing the intra-abdominal pressure by paracentesis may in rare instances aid in retarding the return of fluid into the peritoneal cavity. This factor is probably quite insignificant in the mechanism of ascites formation.

7. *Hepatic Congestion.* Hyatt and Smith[15] have emphasized that ascitic fluid found in cirrhotics is not a simple capillary exudate, and they have postulated that it is derived from hepatic lymph and that the liver was the probable source of the ascitic fluid. They further believe, after numerous animal experiments, that the ascitic fluid exudes through the hepatic capsule into the peritoneal cavity. Gray[23] also suggested that there is a marked increase in the production of lymph during hepatic congestion and that it extruded into the peritoneum.

In that hepatic congestion is not uncommon in portal cirrhosis it may be a significant source of ascites in this disease, though the evidence is not yet conclusive.

8. *Obstruction of Venous Outflow of Liver.* Madden and associates[24] have shown by perfusion experiments that in cirrhotics with irreversible ascites there is an obstruction of the venous outflow tract, probably an obliterative fibrosis of the hepatic veins. However, they postulate that in reversible ascites the obstruction to the outflow tract is due to a cellular edema secondary to protein and electrolyte imbalances, and it is therefore functional and not structural. While a close study of the vascular complexes as outlined by the latex dyes gives some credence to this hypothesis, not sufficient confirmation has been reported to accept this as a satisfactory final explanation of the cause of ascites.

Diseases Accompanied by Ascites

The clinical conditions most likely to be associated with ascites are the following:

1. *Cardiovascular Disease.* When there is a slowing of flow through the hepatic veins, inferior vena cava or right side of heart, ascites may result. Congestive failure and constrictive pericarditis are the most prominent examples of these.

2. *Hepatic Disease, or Disturbances of the Portal Venous System.* Cirrhosis is the most common cause of ascites, but disease of the portal veins or its tributaries, such as portal

vein thrombosis, or cavernous transformation of the veins may rarely cause ascites.

3. *Diseases of the Peritoneum.* Peritonitis, involvement by malignancy, etc., usually result in an exudate.

4. *Hypoalbuminemia.* Ascites may be due to: (a) inadequate intake of protein; (b) poor absorption of protein; (c) deficient synthesis or manufacture of protein, most often due to intrahepatic disease; (d) loss of albumin in feces, urine, ascites, hemorrhage, or inflammatory exudates; and (e) increased destruction of protein as in fever, burns, and the like.

5. *Diseases of Female Reproductive System.* Meig's syndrome or ascites due to malignant tumors of the ovary are examples of this relationship.

6. *Lymphatic System Disease.* Lymphomas, mesenteric nodes, obstruction of thoracic duct may be the cause of ascites.

7. *Miscellaneous.* Nephrosis, leukemias, rupture of a viscus and other still more infrequent entities may result in the clinical manifestations of ascites.

Character of Ascitic Fluid

Transudate. The fluid is clear, yellow and does not coagulate. Its specific gravity is from 1.005 to 1.015. The protein content is about 2.5 Gm. per 100 cc. most of which is albumin, since its molecule is much smaller than that of globulin. The content of glucose, creatinin, urea and uric acid is the same as in the plasma, while the calcium usually ranges from 4 to 5 mg. per 100 cc. There are only a few cells in a transudate and these are usually endothelial or lymphocytes. White blood cells and erythrocytes are rarely found. Transudates are commonly found in non-inflammatory states as in hepatic cirrhosis, hypoproteinemia, congestive heart failure, nephrosis, and others.

Exudate. This is often turbid and usually coagulates. Protein is in high concentration as is cholesterol. White blood cells particularly lymphocytes are common. The specific gravity is over 1.015. Most often the exudate type of fluid is found in inflammatory lesions or in malignant involvement of the peritoneum.

Chylous Ascites. Here the fluid is milky white in color, with a creamy layer containing fat globules; fat content may be as much as 4 Gm. per 100 cc. Protein is usually over 3 Gm. per 100 cc. which is mostly albumin; the specific gravity is over 1.012. It is associated with organic involvement of the mesenteric lymphatics, the receptaculum-chyli or thoracic duct, as by malignant neoplasm or by trauma.

Hemoperitoneum. Grossly bloody ascitic fluid may be due to estopic pregnancy, a ruptured viscus, rupture of a mesenteric vessel, malignancy, or trauma. It occasionally is found in Laennec's cirrhosis, probably due to the associated bleeding tendencies found in this disease.

In case of malignancy involving the peritoneum, malignant cells may be found in up to 65 per cent of the cases.

Even though careful study of the ascitic fluid will often be of significant diagnostic help, the findings at times may be confusing and misleading and therefore should be always correlated with the clinical picture.

Treatment

Paracentesis. This was recommended by Celsus[4] in 20 B.C., and remains an accepted procedure both for diagnosis and treatment. Its greatest usefulness is in removal of fluid in refractory cases. If the bladder is empty and reasonable precautions are taken, no ill effects will result. The removal of ascitic fluid when excessive, will at times result in prompt diuresis. Therefore in refractory edema it is often helpful to utilize this procedure, in the hope that water excretion will be markedly increased.

Paracentesis should be delayed except when there is cardiorespiratory embarrassment, or discomfort is marked, or when oliguria is present, as removal of the ascitic fluid will result in the loss of important protein which might be reabsorbed into the circulation.

Medical Management. The management of ascites should first be directed to its fundamental and basic cause. Then certain procedures may be adopted which may have value in reduction of the ascites before paracenteses is accomplished. In the ascites associated with portal cirrhosis, great improvement may follow the absolute abstinence from alcohol. In patients who have had to be tapped at regular intervals over a long period,

ascites will often cease if they discontinue alcohol and eat an adequate and well balanced diet. Ralli and associates[19] in 1945, emphasized the importance of a high caloric diet, together with intravenous liver extract, and reported several cases in which the abdominal fluid disappeared after this management. She later stated that the liver extract was not an essential part of the therapy.

In ascites due to any disorder, sodium restriction is indicated. In some cases the reduction of the intake of sodium alone will result in a disappearance of ascites. In addition, the use of diuretics may be of considerable assistance. Ammonium chloride and mercurials may both be used but in the presence of even mild hepatic failure ammonium salts should be used with great caution. Hyponatremia may result from prolonged salt deprivation, and the clinician should always be on the alert for the beginning signs of the low salt syndrome, and should add salt to the diet promptly to correct this imbalance.

The intravenous use of blood plasma, albumin or amino acids may at times result in a temporary diminution in the amount of ascitic fluid, and in rare instances when the oral food intake is low these may be utilized as a temporary measure.

To relieve intractable ascites several types of surgical procedures have been attempted but none have stood the test of time as yet.

Prognosis

When ascites is associated with cardiac disease, the heart disease is usually far advanced. But, if the hepatic congestion can be relieved by operative measures such as are employed on the stenotic mitral valve and in constricting pericarditis, the abdominal fluid may disappear.

When ascites is present in patients with Laennec's cirrhosis, it indicates advanced and extensive intrinsic hepatic disease. However, with proper management the abdominal fluid may disappear in many patients as the reparative process in the liver favorably progresses.

Post and Patek,[25] in 1942, reviewed the literature and concluded that the average length of life after ascites is established in portal cirrhosis was approximately 18 months. However, many patients now live for years under appropriate therapy and, even though it may have been necessary to perform paracentesis at regular intervals for a long period, their ascites may often disappear spontaneously when other criteria of liver disease show no significant change.

Summary

The occurrence of ascites in cirrhosis seems to be dependent on many factors. First, there is distortion of the intrahepatic circulation, possibly with an obstruction of the venous outflow tract, which results in stasis and hepatic congestion. This congestion, or some other unknown mechanism, such as hormonal imbalance, initiates fluid and electrolyte disturbances to the extent that salt and water retention occur. When this stage is reached a vicious cycle develops. As sodium and water enter the abdominal cavity there is further retention of these substances, and possibly an exudation of fluid occurs through Glisson's capsule into the ascitic pool. As the plasma protein leaves the capillaries and enters the abdominal cavity, the plasma albumin and consequently the capillary osmotic pressure are lowered and these result in more fluid retention.

Bibliography

1. A New English Dictionary on Historical Principles, London, 1888, Oxford University President.
2. Byron, C. P.: The Papyrus Ebers, London, 1930 Bles.
3. Ibid.
4. Celsus de Medicina, Translated by W. G. Spencer, Cambridge, Mass., Howard Univ. Press, 1938.
5. Mettler, C. C.: History of Medicine, Philadelphia, Blakiston Co., 1947.
6. Payne, J. F.: Discussion of Morbid Anatomy and Pathology of Chronic Alcoholism, Tr. Path. Soc. London 40:310, 1889.
7. Starling, E. H.: Physiological Factors Involved in the Causation of Dropsy, Lancet 1:1267, 1896.
8. Long, E. R.: A History of Pathology, Baltimore, Williams and Wilkins Co., 1928.
9. Bolton, C.: Absorption from the Peritoneal Cavity, J. Path. & Bact. 24:429, 1921.
10. McKee, F. W., Wilt, W. G., Hyatt, R. E., and Whipple, G. H.: The Circulation of Ascitic Fluid, J. Exper. Med. 91:115, 1950. Experimental Ascites, Surg., Gynec. & Obst. 89:529, 1949.
11. McKee, F. W., Schloerb, P. R., Schillings, J. A., Tishkoff, G. H., and Whipple, G. H.: Protein Metabolism and Exchange as Influenced by Constriction of the Vena Cava. Experimental Ascites, an Internal Plasmapheresis, J. Exper. Med. 87:457, 1948.
12. Prentice, T. C., Seri, W., and Joiner, E. E: Quantitative Studies of Ascitic Fluid Circulation with Tritium-labelled Water, Am. J. Med. 13:668, 1952.
13. Rickets, W. E.: Observations on Portal Cirrhosis with Ascites, Am J. Med. 34:37, 1951.
14. Stead, E. A., Jr., and Warren, J. V.: The Protein of Excellular Fluid in Normal Subjects after Venous Congestion and in Patients with Cardiac Failure, Anoxemia and Fever, J Clin. Invest. 23:283, 1944.
15. Hyatt, Robert, and Smith, John R.: The Mechanism of Ascites, Am. J. Med. 16:37, 1954.
16. Herringham, W. P., and Hadfield, C. F.: Causes of Ascites Treated by Deprivation of Salt, St. Barth. Hosp. Rep. 41:25, 1905.
17. Farnsworth, E. B., and Krakusin, J. S.: Electrolyte Partition in Patients with Edema of Various Origins, J. Lab. & Clin. Med. 33:1534, 1948. Idem. In Hepatic Cirrhosis, Ibid. 33:1545, 1948.
18. Verney, E. B.: The Antidiuretic Hormone and the Factors

Which Determine Its Release, Proc. Roy. Soc., London S. B. 135:25, 1948.
19. Sims, J. L.: A Comparison of Renal Function with Urinary Antidiuretic Activity in Cirrhosis of the Liver with Ascites, J. Lab. & Clin. Med. 36:990, 1950.
20. Snavely, J. R.: Hepatic Factors in Salt and Water Metabolism, Am. J. M. Sc. 223:96, 1952.
21. Leutscher, J. A., and Johnson, B. B.: Observations on the Sodium-Retaining Coricoid (Aldosterone) in the Urine of Children and Adults in Relation to Sodium Balance and Edema, J. Clin. Invest. 33:1441, 1954.
22. Mankin, H., and Lowell, A.: Osmotic Factors Influencing the Formation of Ascites in Patients with Cirrhosis of the Liver, J. Clin. Invest. 27:145, 1945.
23. Gray, H. K.: Clinical and Experimental Investigation of the Circulation of the Liver, Ann. Roy. Coll. Surgeons, England 8:354, 1951.
24. Madden, John L., Lore, John M., Gerold, Frank P., and Ravid, Jacob M.: The Pathogenesis of Ascites and Consideration of Its Treatment, Surg., Gynec. & Obst. 99:385, 1954.
25. Post, J., Patek, A. J.: Serum Proteins in Cirrhosis of Liver; Relation to Prognosis and to Formation of Ascites, Arch. Int. Med. 69:67, 1942.
26. Volwiler, W., Grindlay, J. H., and Bollman, J. L.: Symposium on Liver Disease; Relation of Portal Vein Pressure to Formation of Ascites—Experimental Study, Gastroenterology 14:40, 1950.

The Man Behind the Bag*

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Anesthesia is an abnormal condition and thus is not without side effects. The author urges controlled respiration to avoid hypoventilation.

IN RECENT YEARS there has been a tendency to sublimate the importance of the person administering anesthetic drugs to the importance of drugs themselves. This has been particularly true in regard to the muscle relaxants. Since this is the chairman's address and thus not limited to strict scientific endeavor, I propose to develop a train of thought which indicates to me that the results obtained are directly proportional to the skill of the individual. In doing this it is hoped that some thought will be stimulated regarding the basic causes of anesthetic morbidity and mortality. In conclusion, some experimental data are presented to substantiate the views expressed.

Some of the tables and wordings are borrowed from other works and interpreted in a different light. I hereby express my appreciation to those from whose writings I have lifted a sentence, paragraph or an illustration.

This address is divided into four parts: (1) a theory of compensation; (2) a common denominator; (3) a false philosophy; and (4) a possible answer. Any discussion of local or regional technics is omitted and the term anesthesia in each instance refers to general anesthesia.

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A Theory of Compensation

Anesthesia is an unnatural state. All too often we think of a patient deep in the planes of ether anesthesia as being normal. He is normal for this particular plane of anesthesia, but the external evidences of normality only reflect adjustments to an abnormal state.

It is known that ether depresses the vasomotor center with resultant peripheral vasodilatation, yet the blood pressure may remain normal.[1] Cyclopropane decreases the heart rate, increases cardiac output, relaxes peripheral vessels, and increases blood pressure yet relative homeostasis is maintained.[1] The ultrashort acting barbituates decrease blood pressure and increase the pulse rate.[2] Boniface and associates[3] have demonstrated that these three agents decrease the ability of heart muscle to contract. It is unnecessary to enumerate the changes in other body systems, nor is it necessary to describe the compensatory changes which take place. Most of these have been well documented.[4] Only the weakest of anesthetic agents, nitrous oxide, produces no changes. Using a standard gas machine, medullary depression cannot be produced by this agent if administered with adequate oxygen.[5] Nor does nitrous oxide with adequate oxygen produce any other metabolic changes.

Thus, the theory of compensation might be stated in this manner: "For every degree of

depression induced by anesthetic drugs there must be a compensatory change in body mechanisms if function is to remain normal." External evidences do not reveal the degree of compensation that is taking place, but only show that at that particular moment the patient is able to maintain apparently normal function in spite of the anesthetic. The deeper the depression the more compensatory mechanisms required.

It is not surprising that the body can do this. The normal heart has a reserve capacity for contractility of nine times that ordinarily utilized.[3] The lungs contain at least twice the space essential for ventilation. The liver has a tremendous reserve capacity. Human bodies are able to tolerate a great deal of disease. This would not be possible if all organs had the reserve capacity of brain tissue, which dies at the slightest insult and does not regain its function. Although unlike the brain in the factor of time, each of the other systems has its breaking point, at which the return of normal function is impossible.

Our estimate of the physical status of a patient is actually an estimate of what he will tolerate. The choice of anesthesia is made on this basis. When a patient is in good health the problem is simple,—he can withstand any of these insults. This is not so with a patient who has long standing heart disease. We immediately recognize this fact and choose a method which requires the least compensation. The perfect method, when developed, will produce narcosis and relaxation without interference with any physiologic function. Until that day it is our responsibility to take the patient through the pathologic-physiology of present-day methods and return him to bed in the best possible condition. It is not sufficient to place him there alive.

Morbidity and delayed mortality from anesthesia do not receive enough attention. In evaluating surgical deaths it is my feeling that every death within the 72 hour period following operation is attributable to anesthesia unless proven otherwise. Unless there is proof or (in the absence of postmortem examination) strong suspicion that a distinct entity produced the death, anesthesia should be held suspect. Surgery does not go blameless, but if anesthesia can be conducted so as to put little or no strain on physiologic processes part of the postoperative fight will have been won. When all the factors requiring compensation are taken into consideration, it is surprising that there are so few deaths from anesthesia. In many instances, patients survive in spite of the anesthetic.

A Common Denominator

There is respiratory depression with every form of general anesthesia. From the time of the administration of preoperative medication, varying degrees of depression occur in the respiratory center. Compensation for this begins at this point and continues until no postoperative sedation is required. Even operations requiring no muscular relaxation generally require anesthesia which produces respiratory depression. Attempts at compensation are hindered by such things as secretions, partially obstructed airways, laryngobronchospasm and a variety of common annoyances. The muscles of respiration are grossly inefficient even in the normal state. It has been determined that the mechanical efficiency of the respiratory muscle is low (5 to 10 per cent) so that 10 to 20 times the oxygen is required to perform the mechanical work as would be needed to provide a similar amount of heat energy.[6] To this is added the resistance to breathing present in every gas machine. In some instances this resistance is doubled.[7] Various positions increase the effort of adequate breathing,[8] as does the lazy interne who leans. Further insult occurs when the muscle relaxants leave the diaphragm to struggle with the problem unassisted, and hampered by the weight of the abdominal contents.

These factors add up to the common denominator of general anesthesia,—hypoventilation. Hypoventilation leads to a reduction in blood oxygen, retention of carbon dioxide and respiratory acidosis. This always occurs when the patient is breathing air. Increased oxygen tension in the atmosphere may relieve the anoxemia but will not relieve the hypercarbia which leads to acidosis.[6] The fact that hypercarbia is the rule rather than the exception is borne out by recent studies. That anoxemia is present at least part of the time has also been established.[9] Anesthetists have realized that adequate oxygen mixtures are necessary, but many do not appear to realize

TABLE 1

INCIDENCE OF ASSISTANCE TO RESPIRATION*

Inhalation Anesthesia	*Technics—Major Uses*					*Per Cent*
	1948	*1949*	*1950*	*1951*	*1952*	*Totals*	*Total*
	Portion Omitted						
(Totals)	57,400	62,100	65,100	59,800	64,700	309,100	100.0
Controlled Respiration	1,100	1,300	2,300	4,800	3,700	13,200	4.3
Assisted Respiraton		100	100	200	200	600	0.2

*From Beecher, H. K., and Todd, D. P.: A Study of the Deaths Associated with Anesthesia and Surgery, Springfield, Ill., Charles C. Thomas, Publisher, 1954, Table IV, p. 17. (Portion omitted.)

that tidal volume must exceed dead space if adequate ventilation is to occur. Carbon dioxide excess can be just as detrimental as oxygen lack. The combination of the two is probably responsible for most of the difficulties encountered in anesthetic management.

This common denominator, hypoventilation, adds another factor for which the body must compensate. The ability of the body to do so is hampered by the presence of depressant factors, and as the effects of hypoventilation are allowed to persist, further depression of vital centers occurs. We do not see evidence of the degree of compensation necessary until the mechanisms begin to fail. Blood pressure and pulse rate may remain normal for some period of time in the presence of mild anoxemia. Carbon dioxide retention is usually marked by the time warning signs appear. Nevertheless, compensatory mechanisms begin to function with the onset of these changes. If the patient can compensate for these changes, he must still face the changes that occur when the carbon dioxide level returns to normal and the sudden withdrawal of the high oxygen content delivered with most anesthetic agents.[10]

Consider two tables from the report of Beecher and Todd.[11] In table 1 note that out of a total of 309,100 general anesthesias only 13,800 patients received any assistance with respiration. Table 2 shows the time relationships of the deaths that occurred during anesthesia. The percentages increase with the increase in anesthesia time, and this increase was essentially the same whether or not a relaxant was used.

If you will accept the theory of compensation and the common denominator, this indicates that some patients can compensate for hypoventilation for several hours, whereas others can resist the onslaughts of this occurrence for only a few minutes. The percentages of death in relation to time are essentially the same with and without curare. The fact that more deaths occurred with the relaxants is not surprising. When muscles are paralyzed they cannot respond to the demands for more action by the controlling centers. Thus a patient without curare is better able to respond to the demands for compensation by the respiratory center than is the patient who is partially paralyzed. This is not said in order to condemn the use of the muscle relaxants, but merely to point out the need for the elimination of hypoventilation, regardless of the agents or methods used.

In light of this train of thought cardiac arrest is not a sudden occurrence. It is more the sudden end point of a series of events. It occurs most commonly when the cardiovascular mechanisms are compensating for the presence of anesthetic depression, hypoxia, and hypercarbia. Under these circumstances a stimulus which ordinarily is innocuous becomes intensified and produces cardiac stand-

TABLE 2

TIME RELATIONSHIPS OF "ANESTHESIA DEATHS"*

	Time from Last Dose "Curare" to Fatal Episode or Death		*Time from Start of Anesthesia to Fatal Episode or Death "Curare" Cases*	*Time from Start of Anesthesia to Fatal Episode or Death "Non-Curare" Cases*	
	Number Cases	*Per Cent*	*Per Cent*	*Number Cases*	*Per Cent*
Less than 10 minutes	27	23	11	28	10
10 minutes to one hour	31	26	24	95	36
More than one hour	39	33	65	143	54
Inadequate records	21	18			
Total	118	100	100	266	100

*From Beecher, H. K., and Todd, D. P.: A Study of Deaths Associated with Anesthesia and Surgery, Springfield, Ill., Charles C. Thomas, Publisher, 1954, Table XX, p. 34.

still or ventricular fibrillation. In some instances it is probable that the compensatory mechanisms are simply pushed to the "breaking point." The fact that sudden circulatory failure occurs within ten minutes or within an hour of the last injection of a relaxant indicates no inherent toxicity in the drug but merely the time required for hypoventilation to become lethal.

By now it is evident that I incriminate hypoxia and hypercarbia in the majority of anesthetic fatalities. To this, I would only add that I feel also that these factors are primarily responsible for postanesthetic morbidity. This opinion has been expressed in a previous publication.[12] As a result of this feeling, primary consideration is given to the prevention of hypoventilation in every anesthetic administered. This is apparently not the feeling of many anesthetists.

A False Philosophy

Throughout literature on anesthesia today, in articles too numerous to quote, appears a statement similar to this, "When the need arises or when respiration becomes inadequate, manual assistance is given to breathing." In other words, in spite of the fact that it has been established that carbon dioxide levels increase rapidly, sometimes doubling in the first few moments of anesthesia, and that oxygen saturation can be low without demonstrable signs, it is preferable to delay assistance to respiration until the late signs of respiratory depression occur. Many anesthetists are afraid to touch the breathing bag and many are taught not to do so except under extreme circumstances, apparently in dread of the effects on the circulatory system. Yet these same individuals will allow the tidal volume to become so low as to be barely equal to the dead space, introduce resistance into the breathing circuit, paralyze the muscles that perform respiration, and then after several hours wonder why the blood pressure suddenly drops to 80/60 and the pulse rises to 120. If respiration is to be assisted or controlled when it becomes depressed, it should be assisted or controlled from the beginning of anesthesia to the resumption of full reflex activity.

The other trend of thought which appears in the literature regards the choice of anesthesia. In recent years much attention has been given to the choice of anesthesia for cardiac surgery, admittedly the poorest risk patients with which we deal. The criteria for this type of anesthesia are well summarized by Little and Sutton[13] and agree in the most part with the criteria set up by many others: (1) rapid, quiet induction; (2) adequate oxygenation; (3) avoidance of straining or bucking; (4) maintenance of normotension throughout operation; (5) lightest possible level of anesthesia; (6) nontoxic anesthetic agents,—not irritable to the myocardium; (7) nonexplosive anesthetic agents,—if cautery is to be employed; (8) control of cardiac arrythmias; and (9) rapid quiet emergence. To this should be added the control of the carbon dioxide levels.[14] If these are the criteria for the poorest risk patient with whom we deal today should they not be the criteria for every anesthetic administration? If assisted ventilation is essential to these individuals is it not essential to all patients under anesthesia? Does the fact that a patient can compensate for various insults mean that we should permit him to do so, or better yet, force him to do so simply because he has no heart disease? If this is the choice of anesthesia for a mitral commissurotomy, then it is the choice of anesthesia for the excision of a toenail or the repair of an inguinal hernia. The magnitude of surgery may increase the difficulty encountered in maintaining these criteria, but it does not lessen the necessity for maintaining them.

The third trend is a salutory one. For many years, the adverse effects of positive pressure ventilation have occupied a predominant place in the literature. I quote from Etsten, Reynolds and Li,[15] "Although the cardiac output may fall during controlled respirations with cyclopropane anesthesia, it must be pointed out that this reduction of blood flow may be due to the effect of the anesthetic agent. Compensatory mechanisms are intact, as evidenced by the increase in total peripheral resistance to maintain adequate perfusion pressure to vital organs. The findings of this study indicate that physiologic levels of arterial blood oxygen and carbon dioxide can be maintained by manual intermittent positive pressure breathing (controlled respirations) and that the measured reduction

of the cardiac output is apparently not deleterious to the circulation." It is becoming more evident that the apparent harmful effects of positive pressure are probably due to the depth of anesthesia used to produce a state of apnea and to inadequate ventilation when apnea does occur. In spite of this, there are still many instances in which the operation is stopped when apnea occurs and resumed only with the return of spontaneous, shallow, obviously inadequate respirations.

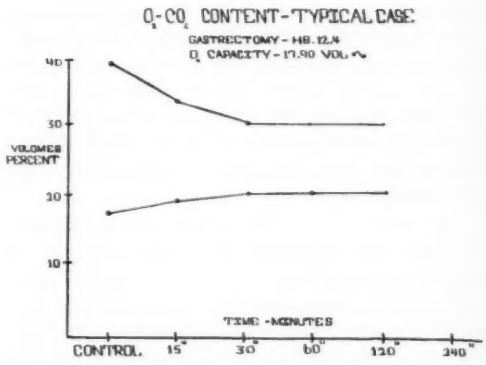
A Possible Solution

In a recent issue of *Anesthesia and Analgesia*[16] our group published the clinical results in 3,000 patients with our technic utilizing succinylcholine (Anectine) for the production of apnea and nitrous oxide as the main source of hypnosis and analgesia. To date we have administered this combination, without modification, to 10,000 patients. The full results will be published at a later date. Although this technic is not perfect, it does solve most of the problems mentioned above and eliminates many of the hazards frequently referred to in the literature. By taking the indications listed as criteria for anesthesia in cardiac surgery I will attempt to explain under each where our technic fills each requirement. Some experimental evidence will be given. Other experimental data, not yet complete, will be presented in a later paper.

1. *Rapid, quiet induction.* This is achieved with an ultra-short acting barbiturate (Surital), the dose seldom exceeding 400 mg. The effects of this amount on the cerebral cortex have been shown on numerous electroencephalograms to be dissipated within 15 minutes of the completion of injection. No more barbiturate is given.

2. *Maintenance of adequate oxygenation and carbon dioxide elimination.* Upon the loss of consciousness, apnea is produced by the rapid administration of Anectine, 0.2 per cent, in 5 per cent glucose and D/w. As soon as the drip is started the mask is applied and assisted ventilation with 75 per cent nitrous oxide and 25 per cent oxygen is begun, the liter flow being 3:1. The carbon dioxide absorber is always in the circuit. As respiration ceases positive pressure ventilation is maintained at a rate of from 16 to 24 times per minute, depending upon the rate of expiration. This is continued until near the end of operation, when the patient is allowed to resume his own respiratory activity. Assisted ventilation is continued until spontaneous respiratory activity is completely adequate and complete function has returned to the intercostal muscles.

FIG. 1



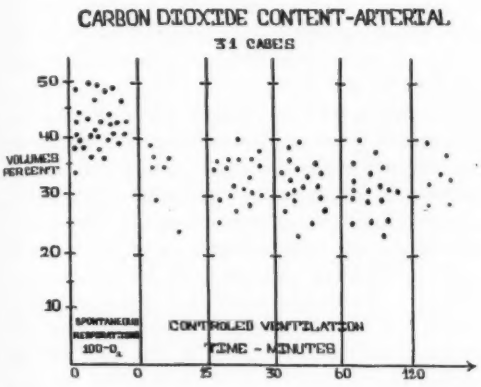
Under these conditions we have used the Bennett ventilation meter to determine tidal volumes. Measurement to date has been made on about 150 patients, with nine different anesthetists. Regardless of position, tidal air does not fall below 500 cc. and the average tidal air in adult patients is 700 cc., thus producing a minimum minute volume of respiration of 8,000 cc. (no correction for dead space). The pressures evolved in the breathing tubes have not exceeded 20 mm. of Hg. unless excessive and unnecessary force is used in squeezing the bag.

With this technic, the arterial oxygen and carbon dioxide contents were measured on 37 patients. In each instance the patient was induced with a small amount of barbiturate and a control sample drawn from the femoral artery while 100 per cent oxygen was being administered. Then subsequent samples were drawn at 15, 30, 60, 120, and 180 minutes from the radial artery and the determinations run according to the method of Van Slyke.[17] These patients were in various positions and undergoing varied types of operations. Unfortunately, pH determinations were not feasible at this time.*

Figure 1 shows what occurs in the average patient with this method of ventilation. Car-

*This work was made possible by a research grant from Burroughs-Wellcome Co., Tuckahoe, N. Y.

FIG. 2



bon dioxide content is decreased and does not rise; oxygen content is held at, or slightly above control levels. Figure 2 shows the carbon dioxide content in 31 of these cases. It is evident that a state of respiratory alkalosis begins within the first 15 minutes and is maintained throughout the period of apnea. Table 3 lists the values for oxygen content. Lack of space prevents the listing of per cent saturation, but the values in nearly every instance approach or exceed the oxygen capacity. No consideration was given to the possible increase in hemoglobin content due to the administration of whole blood, nor to the relative increase in hemoglobin as a result of hemoconcentration. This may explain some of the seemingly high values since oxygen capacity was determined on a "pooled" specimen.

Figure 3 is a graphic representation of oxygen-carbon dioxide content in a patient with severe emphysema. The high level of carbon dioxide was brought down to normal levels and remained there throughout several hours of surgery. Table 4 contains the results in the remaining six patients under somewhat altered circumstances. The use of the Jefferson ventilator has proved a most satisfactory method of artificial ventilation. At the end of anesthesia, after the patient has been breathing for 15 minutes, there is no significant elevation of the carbon dioxide

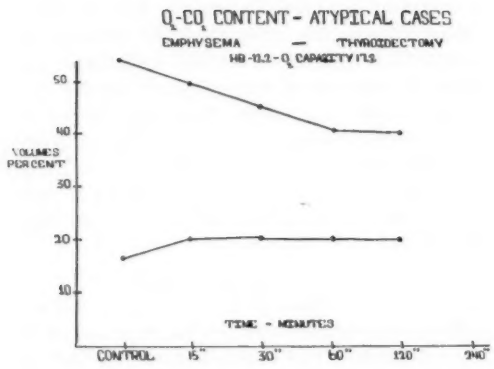
TABLE 3

OXYGEN CONTENT OF ARTERIAL BLOOD WITH CONTROLLED RESPIRATIONS*

Case No.	*Age*	*Type of Surgery*	*Hgb. Gm.*	*O_2 Capacity Estimated*	*O_2 Capacity Determined*	*Control*	*15 Min.*	*30 Min.*	*60 Min.*	*120 Min.*	*180 Min.*
1	35	Lobectomy	12.2	16.6		18.9	20.1	19.8		19.8	
2	11	Patent ductus	11.6	15.8		17.06			17.96		
3	25	Pulmonic valve	13.3	18.3		20.16	19.46		20.13		21.81
4	16	Coarctation	14.6	19.85	19.72	19.86		21.83		20.48	21.65
5	22	Lobectomy	12.6	17.13		18.71	20.09		20.38		
6	69	Pneumonectomy	11.4	15.5		18.20		17.51			
7	8	Pulmonic valve	15.0	20.40	20.59	19.44		19.77	19.26	19.52	
8	33	Thyroidectomy	13.4	18.22		17.72	19.17		17.36	18.28	
9	48	Thyroidectomy	13.3	18.20		16.67			18.98		
10	64	Thyroidectomy	12.2	16.60		18.30	20.90	20.00	19.20		
11	52	Thyroidectomy	11.6	15.70				17.60	16.70		
12	37	Thyroidectomy	11.4	15.50		15.50		18.30	18.50		17.90
13	54	Thyroidectomy	11.3	15.30	14.90	16.45		17.01	16.01	17.55	
14	52	Abd. perineal	13.0	17.68	17.44	18.83		19.40	19.31	19.87	
15	45	Colon resec.	13.4	18.22		17.64			18.29	18.80	18.26
16	17	Colectomy	15.0	20.40	20.42	22.94		22.09	22.92	22.85	
17	49	Pelviolithotomy	13.0	17.68					16.70	19.40	20.00
18	68	Cholecystectomy	12.8	17.41		15.49	17.90	16.24		17.49	
19	48	Herniaplasty	14.7	19.98	19.86	18.35		19.93	19.04	19.04	
20	55	Herniaplasty	13.8	18.46		18.94		20.07	20.75	21.04	
21	57	Vag. hyster.	13.0	17.68	17.66	12.99			18.41	18.98	
22	62	Vag. hyster.	12.0	16.32	17.14	13.43			17.79	17.14	
23	55	Perineorraphy	11.3	15.45	16.47	16.26		17.60	18.23	17.11	
24	51	Gastrectomy	12.8	17.41	17.34	14.64		16.70	19.86	19.45	
25	38	Gastrectomy	12.8	17.41	19.52	18.94		19.82		20.12	
26	29	Gastrostomy	12.3	16.73	16.82	13.83	18.69	18.91			
27	19	Gastrostomy	11.8	16.04	17.53	17.56	18.19		18.54	17.72	
28	68	Exploratory lap.	12.8	17.41	17.08	18.00			18.91	18.91	
29	43	Abd. hyster.	13.4	18.22	18.97	16.76			18.33	18.89	
30	34	Craniotomy	13.0	17.68	18.52	16.59		18.90			18.92
31	45	Chordotomy	11.2	15.23	17.22	15.83		16.59		17.61	17.78

*All values, except hemoglobin, expressed in volumes %.

FIG. 3



content, probably as a result of the high flow of gases utilized. At bronchoscopy these values did not change significantly, the main ventilation being furnished by the insufflation of oxygen, 15 liters per minute, through the bronchoscope.

This work has substantiated our clinical impression that with this technic oxygen content is maintained at a normal level, and that carbon dioxide content is consistently lowered. Thus we have a positive method of controlling two factors extremely variable under other circumstances. It is this consideration that leads us to use this technic in all patients requiring general anesthesia, since we are certain that there will be no oxygen want and no carbon dioxide accumulation. For this reason I cannot agree with the statement recently made regarding muscle relaxants, "Their use for superficial operations such as craniotomy, mammectomy, plastic operations, and other instances in which muscle relaxation is not required, or can be obtained without them, is indicative of lack of thought and judgment."[2]

3. *Avoidance of straining or bucking.* A paralyzed patient does not cough or buck, consequently there is no reaction on the insertion of an airway or an endotracheal tube. No topical agent is used except for the lubrication of the endotracheal tube with 5 per cent Xylocaine ointment. Although the patient is not maintained in the completely paralyzed state throughout anesthesia, reaction to the endotracheal tube is not troublesome and can be controlled within a few seconds by speeding the intravenous drip of Anectine.

4. *Maintenance of normotension.* With the maintenance of the aforementioned levels of oxygen and carbon dioxide, the maintenance of normotension becomes less of a problem. Not a small part of this is due to the lack of the necessity for compensation on the part of the circulatory system, and to the lack of depression of the central nervous system. The only compensation required is for the minimal effects of positive pressure. Since the level of anesthesia is not below the electroencephalographic level of analgesia, the medullary centers are in no way depressed, and thus the patient is better able to compensate for positional changes, sudden loss of blood, etc. Vagotonia, resulting in hypotension and bradycardia, is seen with some frequency but has not failed to respond to the intravenous administration of atropine. Patients in shock

TABLE 4

CARBON DIOXIDE-OXYGEN CONTENT OF ARTERIAL BLOOD WITH SPECIAL CONSIDERATIONS*

Case Number	*Age*	*Type of Operation*	*Hgb. Gm.*	*O_2 Capacity Estimated*	*O_2 Capacity Determined*	*Control*	*15 Min.*	*30 Min.*	*60 Min.*	*120 Min.*	*180 Min.*
Apnea with oxygen insufflation through bronchoscope, no respiratory activity:											
1	17	Bronchoscopy	12.8	17.41	16.92	(O_2) 17.95	18.38				
						(CO_2) 44.30	43.95				
2	42	Bronchoscopy	10.6	15.04	14.58	15.39	14.87				
						46.93	48.63				
All respirations done with Jefferson ventilator:											
3	34	Lobectomy	11.8	16.04	15.84	15.21		16.90	17.52	16.57	
						46.35		35.00	32.80	29.35	
4	48	Gastrectomy	12.4	16.86	17.90	17.44		19.46	19.74	19.60	
						41.54		32.02	30.83	30.26	
Spontaneous respirations (full return of muscle power) fifteen minutes before last sample:											
5	53	Herniaplasty	14.7	19.98	19.60	20.97		20.94	19.69	19.55	
						38.53		34.97	32.56	45.51	
6	50	Thyroidectomy	11.4	15.50		15.50		18.30	18.50		17.90
						44.30		42.50	31.10		46.78

*All values, except hemoglobin, expressed in volumes %.

have responded to the replacement of blood in a manner resembling the response that would be expected were anesthesia not present. No ill effects of positive pressure ventilation have been seen on the circulatory system. Further studies of the degree of cardiovascular compensation necessary under this set of circumstances will be forthcoming.

5, 6, 7. *Maintain the lightest possible level of anesthesia with nontoxic and nonexplosive agents.* This can only be accomplished with nitrous oxide. Continuous electroencephalographic tracings have shown that the level of anesthesia is exceedingly light. Interpretation of the patterns by an individual not knowing the circumstances was, "This is a patient, sedated, but still moderately apprehensive about what is going on." There can scarcely be a lighter level of anesthesia. Since nitrous oxide is nonexplosive, the electrocautery may be used directly on the parenchyma of the lung. To emphasize its nontoxic properties would only repeat what is common knowledge to all. It is the preferred agent during apnea since the depth of anesthesia will not be increased and thus overdosage is impossible.

8. *Control of cardiac arrythmias.* No arrythmias have been encountered except the aforementioned bradycardia, unless the heart is manipulated. There have been no primary cardiac arrests. It is my impression that the cardiac rhythm is more stable than usual, even when cardiac surgery is performed. This is attributed to the control of the carbon dioxide content of the blood. Recently Swann[18] has pointed up the significance of this factor. He states, "On the basis of early experimental experience, we became convinced that hypoxia and hypercapnia were undesirable, and in addition, that deliberately induced hypocapnia (respiratory alkalosis) played a valuable role in reducing the incidence of ventricular fibrillation. We subsequently have presented evidence to show that ventilation appears to affect the myocardial metabolism of potassium, namely that during hypoventilation the myocardium is storing potassium, whereas during hyperventilation the myocardium is in potassium balance. Whether or not the potassium ion is critical in this situation, the effect of adequate ventilation is so convincing to us that we subject all of our patients to deliberate hyperventilation throughout the cooling, operative, and warming period. If circulatory occlusion is planned, the pH of the right auricular blood (determined at the patient's body temperature) is obtained, and a pH greater than 7.5 is considered desirable before circulatory arrest is established." This substantiates to a degree that there are no harmful effects of hyperventilation.[19]

9. *A rapid, quiet emergence.* Most of these patients are conscious during the application of the dressing and recall this event on the following day. No patient who was conscious on arrival to the operating room has failed to regain consciousness of a comparable level within one hour of the cessation of anesthesia as a result of this technic. The exceptions have been in certain cranial procedures and in one patient who received no oxygen through an error in the use of the gas machine. Emergence is accomplished without excitement even though many patients remove their own airways.

Summary

I do not present this technic as the final solution to the problem of anesthesia, but it has given excellent results in our hands. The fact that these results have come in conjunction with the positive control of ventilation prompts me to attach a great deal of significance to the man behind the bag.

No anesthesia is without side effects. Your choice of agents will depend on whether you prefer to "poison" the heart, the brain, or the muscles. All anesthesia is associated with disturbances in ventilation. The bag of the anesthesia machine was originally intended as a reservoir for anesthetic gases, not as a container for carbon dioxide. The man behind this bag can do much to prevent anesthetic mortality and morbidity if he will but reach out his hand and do so.

Bibliography

1. Beckman, Harry: Pharmacology in Clinical Practice, Philadelphia, W. B. Saunders Co., 1952, pp. 29, 82.
2. Adriani, John: Selection of Anesthesia, ed. 1, Springfield, Ill., Charles C. Thomas, Publisher, 1955, pp. 38, 137.
3. Boniface, Kenneth, and Brown, John: Effects of Various Anesthetic Agents on Myocardial Contractility. (To be published.)
4. Adriani, John: The Pharmacology of Anesthetic Drugs, ed. 3, Springfield, Ill., Charles C. Thomas, Publisher, 1953, p. 24.
5. Harris, T. A. B.: Mode of Action of Anesthetic Agents, London, E. and S. Livingston, Ltd., 1951, p. 254.
6. Comroe, J. H., Forstere, Robert, DuBois, A. B., Briscoe, W. A., and Carlsen, E.: The Lung, ed. 1, Chicago, The Year Book Publishers, 1955.
7. Proctor, Donald F.: Studies of Respiratory Air Flow, IV: Resistance to Air Flow through Anesthesia Apparatus, Bull. Johns Hopkins Hosp. 96:49, 1955.

8. Leffingwell, F. E.: The Anesthetist's Responsibility for Malposition, J. Am. A. Nurse Anesthetists 22:267, 1954.
9. Lackman, R. J., Long, J. H., and Krumperman, L. W.: Changes in Blood Gases Associated with Various Methods of Induction for Endotracheal Anesthesia, Anesthesiology 16:29, 1955.
10. Davis, David A., Ellis, F. C., Reese, N. O., and Grosskrentz, D. C.: The Prolonged Effects of Succinylcholine and Some Possible Explanations for These Phenomena, Anesthesiology 16:333, 1955.
11. Beecher, H. K., and Todd, D. P.: A Study of Deaths Associated with Anesthesia and Surgery, ed. 1, Springfield, Ill., Charles C. Thomas, Publisher, 1954.
12. Rumble, L.: Side Effects of Anesthesia, J. South Carolina M. A. 51:61, 1955.
13. Little, D. M., Jr., and Sutton, G. C.: Succinylcholine—Nitrous Oxide Anesthesia for Mitral Commissurotomy, Canad. Anesthetist Soc. J. 2:156, 1955.
14. Sadove, M. S., Wyant, G. M., Ormand, C. J., and Dye, W. S.: Anesthesia for Mitral Commissurotomy, Anesthesiology 16:133, 1955.
15. Etsten, B., Reynolds, R. N., and Li, T. H.: The Effects of Controlled Respiration on Circulation During Cyclopropane Anesthesia, Anesthesiology 16:365, 1955.
16. Rumble, L., Gholson, A. R., and Peters, M.: Controlled Apnea with Succinylcholine, Anesth. & Analg. 34:261, 1955.
17. Peters, J. A., and Van Slyke, D. W.: Quantitative Clinical Chemistry, Baltimore, Williams and Wilkins, 1931.
18. Swann, Henry, Virtue, R. W., Blount, S. G., and Kircher, L. T.: Hypothermia in Surgery, Ann. Surg. 142:384, 1955.
19. Kety, S. S., and Schmidt, C. F.: Effects of Active and Passive Hyperventilation on Cerebral Blood Flow, Cerebral Oxygen Consumption, Cardiac Output and Blood Pressure of Normal Young Men, J. Clin. Invest. 25:107, 1946.

The Problem of the Cervical Stump*

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The cervical stump left after incomplete hysterectomy has the anticipated incidence of carcinoma of the cervix in general. In the presence of malignancy, however, treatment is handicapped.

THE LITERATURE ON THE SUBJECT OF CARCINOMA of the cervix following supracervical hysterectomy is extensive, and the value of total hysterectomy over incomplete hysterectomy is frequently discussed in the prevention of cervical cancer. It would seem there is general agreement that, in the hands of a well trained gynecologist or surgeon, total hysterectomy is the procedure of choice and has many advantages over the incomplete operation. However, there are many women living today who have had the incomplete procedure, and we thought it would be worthwhile to investigate the hazards of the "cervical stump" in a group of women who were treated by supracervical hysterectomy in the University of Virginia Hospital. The series consists of 1,157 patients who were operated upon during the period from January 1, 1931, to December 31, 1950.

Clinical Study

The case study was not carried beyond the year 1950 since only an occasional incomplete hysterectomy has been done since that date, and the termination of the study at that time would permit a minimal follow-up of 57 months. The trend in our clinic from supracervical to complete hysterectomy is graphically illustrated in table 1. The policy since 1947 has been to perform the complete operation unless the operator thought that removal of the uterine cervix would be hazardous to

TABLE 1

HYSTERECTOMIES: TYPE OF OPERATION

Year	*Complete*	*Incomplete*
1931	1	63
1932	19	58
1933	11	75
1934	8	84
1935	12	72
1936	14	73
1937	20	78
1938	10	99
1939	16	73
1940	13	52
1941	28	73
1942	64	52
1943	33	62
1944	32	49
1945	57	85
1946	102	60
1947	101	20
1948	127	17
1949	155	8
1950	112	4
Total 20 years	935	1,157

*Read before the Section on Gynecology, Southern Medical Association, Forty-Ninth Annual Meeting, Houston, Tex., November 14-17, 1955.

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TABLE 2

DEATHS IN SERIES

Postoperative	
Rupture of uterus	4
Pulmonary embolus	3
Dehiscence	2
Perforated rectum	1
Peritonitis	2
Hemorrhage	2
Renal insufficiency	1
Atelectasis	1
Intestinal obstruction	4
Total	20
Subsequent and Unrelated	
Carcinoma (other than cervix)	39
Cardiovascular-renal	20
Later surgery	2
Other	4
Unknown	3
Total	68

the patient. Under such circumstances no stigma is implied.

The authors appreciate that a follow-up study of this type is incomplete and does not reveal the true picture until each woman in the study has completed her life span. An absolute follow-up is possible for 88 women as shown in table 2. An operative mortality rate of 1.73 per cent was obtained during a 20 year period in which antimicrobial agents and adequate compatible blood were not always available. One of the deaths from dehiscence of the wound occurred in a patient in whom invasive carcinoma of the cervix was found in the surgically removed portion of the uterus. Sixty-eight deaths were not related to the incomplete hysterectomy. Thirty-nine of the 68 subsequent deaths were due to malignancy which was not primary in the uterine cervix. In some of the deaths from malignancy, the primary site was the endometrium or the ovary. The retained portion of the cervix was removed in 7 additional patients for benign disease, permitting an absolute follow-up of 95 patients.

In addition to the 95 patients mentioned above, 686 women were followed either by interview or actual examination as shown in table 3. The follow-up of the 380 women shown in table 3 was obtained by questionnaire, or from another physician and only signifies that the patient was living and without pelvic symptoms. This information does not exclude the possibility of asymptomatic malignancy in the retained portion of the uterus. The follow-up study was terminated as of October 1, 1955, which permits a minimal period of 57 months for the patients operated upon in the year 1950.

Eight patients in the group of 686 women, who have been followed since the supracervical hysterectomies were performed, have developed carcinoma in the retained portion of the uterus as shown in table 4. It is interesting to note that in 6 of the 8 patients the diagnosis of uterine cervical malignancy was either established at the time of, or within two years of the incomplete hysterectomy. The nomenclature used in table 4 is that used by Nuttall and Todd[1] to designate the time relationship between supracervical hysterectomy and the diagnosis of carcinoma of the uterine cervix. The incidence rate for carcinoma of the "cervical stump" is 1.03 per cent for the 781 women, including the 95 patients with absolute follow-up, who have been followed to October 1, 1955. The New York State Department of Health,[2] from morbidity reports, estimates the probability of a woman developing cancer of the cervix uteri from birth to death as being 2.196 per cent. The low figure shown in our follow-up is of no significance since all of the women in the series have neither been followed to date nor, more significantly, to death. However, there is no sound reason to believe that cancer is more prone to develop in the "cervical stump" than in the intact uterus.

The problem of "stump cancer" is proba-

TABLE 3

FOLLOW-UP INVESTIGATION

	2-9 Yrs.	*10 Yrs.*	*15 Yrs.*	*20 Yrs.*	*Total*
Pelvic examination	60	50	98	98	306
Interview	71	77	130	102	380
Total					686

TABLE 4

CARCINOMA OF CERVICAL STUMP

	In Situ	*Invasive*
"True"*	0	2
"Coincidental"**	1	5
Total	1	7

*"True"—Occurring over two years after initial operation.
**"Coincidental"—Present at time of operation, or within two years thereafter.

TABLE 5

SITE OF OTHER MALIGNANCIES OCCURRING OVER 2 YEARS AFTER SUPRACERVICAL HYSTERECTOMY

Breast	4
Large bowel	5
Kidney	2
Parotid	2
Nasopharynx	3
Lung	1
Thyroid	1
Ovary	1
Scalp	1
Hemangio-endothelioma	1
Brain tumor	2
Leukemia	1
Vertebra	1
Carcinoma of vagina	1
Total	26

bly most succinctly expressed by Hendricks[3] and merits quoting: "Basically, cancer arising in the 'cervical stump' at a date remote from hysterectomy, differs little in symptomatology, histologic diagnosis, or clinical behavior from cancer occurring in the presence of the uterine fundus. Inasmuch as the chief factor setting these cases apart from the usual form of carcinoma of the cervix is a previous supracervical extirpation, it is probable that the incidence of carcinoma of the cervical stump varies directly with the number of times the supracervical operation is performed."

The follow-up study of the 1,157 patients with incomplete hysterectomies reveals interesting findings from a public health viewpoint. Twenty-six of these patients developed malignant neoplasms of extrauterine origin as shown in table 5. The significance of these findings is evident when comparison is made with table 4 showing only two patients developing carcinoma of the "cervical stump" after an interval of more than two years after the initial operation. These findings emphasize that the retained portion of the uterus following supracervical hysterectomy represents only one of the possible sites in which malignancy may develop.

TABLE 6

CARCINOMA OF CERVIX IN 1,026 CASES (1931-1955)

	Intact Uterus	*Stump*
Adenocarcinoma	56	7
Epidermoid	852	60
In situ	67	4
Total	955	71

TABLE 7

TIME OF OCCURRENCE OF CARCINOMA OF THE STUMP

	In Series 1931-1950	*Operated on U. of Va. Prior to 1931*	*Operated on Elsewhere*	*Total*
"True stump"	2	8	34	44
"Coincidental"	4	0	5	9
At time of surgery	2	0	16*	18
Total	8	8	55	71

*Eight of the 16 patients were recognized to have carcinoma of the cervix prior to incomplete hysterectomy.

During the period, January 1, 1931 to October 1, 1955, covered in the follow-up of patients with incomplete hysterectomies operated in our clinic, there were 1,026 patients seen with carcinoma of the uterine cervix. Of the 1,026 patients with proven carcinoma of the cervix, there were 71 patients in whom incomplete hysterectomies had been done. The types of malignancy and the relationship of "stump cancer" to cancer developing in the intact uterus are shown in table 6.

The relationship of the operation to the time of establishment of the diagnosis of malignancy is shown in table 7. The important finding that carcinoma was proven to exist at the time of operation in 18 patients and was probably present in an additional 9 patients points out the value of adequate investigation of the cervix prior to proposed operation. The incidence rate for "coincidental cancer" in our series of cancer of the "cervical stump" is 38 per cent. Of the 143 patients with cancer of the retained portion of the uterus reported by Morris and Meigs,[4] 53 patients (37 per cent) had the diagnosis of malignancy made within one year of, or at the time of supracervical hysterectomy. This

TABLE 8

INCIDENCE OF "COINCIDENTAL CANCER" (VARIOUS AUTHORS)

	Number Stumps	*"Coincidental Ca."*	*Per Cent "Coincidental"*
Hendricks[3]	28	6	21.4
Braund & Green[5]	43	18	41.9
Nuttall & Todd[1]	38	18	47.4
Fricke & Bowing[6]	99	42	42.5
Total	208	84	40.4
Present series	71	27	38.0
Grand total	279	111	39.8

significant observation has been pointed out by other authors as shown in table 8.

The incidence rate for "stump cancer" in our series of 1,026 carcinomas of the cervix is 6.9 per cent. However, it should be recognized that this is not a true incidence for carcinoma of the retained portion of the cervix since the patients in the series are referred from many localities and there is no remote chance of estimating the total number of supracervical hysterectomies represented by this group. In addition to this factor of selectivity in the series, it has been pointed out that 38 per cent of the malignancies of the "cervical stump" were present at the time of supracervical hysterectomy or were diagnosed within two years thereafter.

The value of routine investigation of the cervix by biopsy or smear prior to hysterectomy has not been altered by the trend to complete hysterectomy. Rarely is removal of the uterus an emergency procedure, and the accepted principle that total hysterectomy is an inadequate operation for invasive cervical cancer, only stresses the importance of investigation of the cervix prior to either total or supracervical hysterectomy.

Discussion

The authors are staunch advocates of complete hysterectomy. The operative mortality and morbidity associated with this procedure at the present time have been shown to be no higher than with the supracervical operation. However, the incomplete operation is still performed with some frequency and there are many women living today with "cervical stumps." There would seem to be no sound reason to believe that these women are more prone to develop cervical cancer than in the presence of the intact uterus. The problem of early detection of cancer is essentially the same in both groups, and the only practical approach in either group is through periodic examination with cytologic studies, when available, and biopsy of any lesion of the cervix which may be present.

Should supracervical hysterectomy be performed, it should be the obligation of the physician to acquaint the patient with the necessity of periodic examination of the retained portion of the uterus.

Complete hysterectomy is not the final answer in the prevention of cervical cancer. It is highly dubious that simple complete hysterectomy would have altered the prognosis in those women proven to have invasive cervical cancer at the time of supracervical hysterectomy. Moreover, the complete operation may not have changed the prognosis in the entire group of "coincidental cancers" of the retained portion of the uterus.

It is an accepted principle that simple total hysterectomy is an inadequate operation for invasive carcinoma of the cervix. In the presence of invasive cervical cancer, either the supracervical or the total operation greatly magnifies the problem of additional therapy. The postoperative discovery of cervical cancer is an avoidable accident, and current teaching should stress the importance of routine and adequate investigation of the cervix by smear or biopsy prior to hysterectomy.

Bibliography

1. Nuttall, J. R., and Todd, T. F.: The Prognosis in Carcinoma of the Cervical Stump after Sub-total Hysterectomy; A Critical Analysis of 38 Cases, J. Obst. & Gynaec. Brit. Emp. 42:860, 1935.
2. New York State Department of Health, Program Plan for Cancer Control, Bureau of Cancer Control, New York State Department of Health, May 1948.
3. Hendricks, C. H.: Supracervical Hysterectomy and Carcinoma of the Cervix, J.A.M.A. 146:100, 1951.
4. Morris, J. McL., and Meigs, J. V.: Carcinoma of the Cervix: Statistical Evaluation of 1,938 Cases and Results of Treatment, Surg. Gynec. & Obst. 90:135, 1950.
5. Braund, Ralph R., and Green, D. R.: Cancer of the Cervical Stump; A Plea for its Early Recognition and Prevention, Am. Surgeon 17:830, 1951.
6. Fricke, R. E., and Bowing, H. H.: Radium Treatment of Carcinoma of the Cervical Stump, Am. J. Roentgenol. 43:544, 1940.

Discussion (Abstract)

Dr. J. T. Armstrong, Houston, Tex. This large series indicated that carcinoma is no more likely to develop in the cervical stump than in the cervix of an intact uterus. It should be emphasized that when it does occur in the stump the treatment is not as successful as in the intact uterus. The radium tandem inserted in the cervical canal and uterine cavity is the most valuable source of irradiation in the treatment of the primary lesion and the parametrium. As a consequence of the short canal or no canal at all the patient gets inadequate treatment.

The presentation also shows the very important need of more careful study of the patient before any hysterectomy, be it vaginal, complete or supravaginal. When any of these operations are done, and a carcinoma is present coincidentally the patient is usually left in such a condition that adequate irradiation therapy is almost impossible. In my limited experience in a gynecologic cancer clinic the presence of a cancer in a postoperative patient is dreaded the most and the results are very poor. The more frequent use

of biopsy of the cervix and diagnostic curettage should be kept in mind.

Although cancer in the residual cervix is important, the benign lesions should not be passed over too lightly. Aldridge reported that "Approximately 85 per cent of women who have indications for hysterectomy will also have cervices with chronic inflammatory lesions or unhealed birth injuries or both." Collins and others have studied these benign lesions extensively. The most usual symptoms encountered are pelvic pain, leukorrhea, bloody discharge, dyspareunia, backache, urinary discomfort and bearing-down feeling in the pelvis. Most complaints are multiple. One-third of the patients still had the complaint for which the supravaginal hysterectomy had been done. Pathologic studies of the cervices giving the above symptoms include chronic, and chronic cystic cervicitis, stenosis, empyema, polyps, endometriosis, fibroids, epidermoid carcinoma, and granuloma.

Occasionally a patient has some form of treatment of the diseased cervix from below before the abdomen is opened for the supravaginal hysterectomy. These treatments include surgical amputation, cauterization, conization from below, and occasionally from above after the corpus has been amputated. These are unsatisfactory and frequently produce stenosis, mucoceles, and empyema.

However if the cervix is permitted to remain, this fact should be told to the patient so she can have periodic examinations, because it is still the most frequent site of genital cancer.

Dr. Thornton (Closing). I should like to thank Dr. Armstrong for his kind remarks in his discussion of our paper, and I should like to thank you for the privilege of appearing before this section.

Rehabilitation Centers in Modern Medicine*

HARRIET E. GILLETTE, M.D., *Atlanta, Ga.*

The author describes the multiple functions of the rehabilitation center and what it means to the community.

DURING THE PAST TEN YEARS nearly all branches of medicine have become increasingly aware of the supposedly new concept called "rehabilitation." To many physicians this term means certain mysterious procedures which can take place only in elaborate institutions in far-away cities, at a cost which is prohibitive for all except a few of their patients. To the layman the term often means the miraculous cure of a disability which could be obtained without effort, if only someone would pay the bills. To those of us in all branches of medicine who practice the art and science of rehabilitation, the word describes a practice which has been taking place for centuries,—the conservation and development of residual abilities.

Through the ages mankind has been able to record successes of some of its seriously disabled members who achieved their goals with little or no assistance. On record, also, are stories of those whose promising careers were thwarted because of a relatively minor impairment. The negro man, whose midthigh amputation was fitted with a peg leg made of a railroad tie and fragment of track which has enabled him to hold a job for twenty years, could not pronounce the word rehabilitation, and yet he was a fine example of the most important factors for success in the program, motivation and ingenuity. The conscientious country doctor practiced rehabilitation many years ago when he encouraged his patient, advised the family, and helped in devising simple apparatus to make living easier. Rehabilitation is not new, it is only maturing.

The vicissitudes which the disabled person of earlier decades had to undergo in order to achieve independence were tremendous, and such help as could be obtained was given by the trial and error method. First, he had to

*Chairman's Address, Section on Physical Medicine and Rehabilitation, Southern Medical Association, Forty-Ninth Annual Meeting, Houston, Tex., November 14-17, 1955.

find the courage to accept his handicap, and the resolution to succeed in spite of it. This first requirement often proved too great, and he became "the afflicted member of the family," and was treated accordingly. If the first hurdle was cleared, the next immediately presented itself,—improvement of physical status. This entailed proper food, the opportunity to exercise and to rest, treatment of complications, and sometimes the construction of supporting or assisting devices engineered in a crude fashion at a high output of time and labor. Fortunate was the cripple who heard of someone who had solved a similar problem and would share his knowledge. Next came the task of learning to get about, to feed and dress himself, and to care for his daily needs. Again, by trial and error this was often accomplished but with much wasted energy and time. Finally, came the last obstacle, braving the stares of a misunderstanding and curious public, and asking for a job. All of this has been accomplished many times with little or no help, but the number of those who began the climb decreased at each step until those who achieved the top were pitifully few.

It was a natural thing and characteristic of our age of mass production, that centers should evolve wherein individuals with various handicaps could reach the highest goal with a minimum expenditure of time, effort, finances, and grief. In this process of development it was found that many disciplines were required to assist the disabled person to overcome his emotional, social, physical and vocational handicaps. Physicians from varied medical specialties found that by working with each other, and with psychologists, therapists, social workers and vocational counselors, they could accomplish with many patients in a short time, what it had taken one patient and his family doctor years to achieve. The center became a clearinghouse for ideas developed by patients and by the professional staff which could be immediately applied elsewhere. Centuries-old rehabilitation still is powered by motivation and ingenuity, but it has acquired a streamline chassis.

If it is possible for a disabled person to achieve independence in his home, what is the reason for the present trend toward the development of centers which are expensive to build and more expensive to operate? To answer this question I shall present a picture of a privately owned outpatient facility for Physical Medicine and Rehabilitation, showing the use to which it is put in the community.

The staff consists of a physiatrist, two physical therapists, one corrective therapist, and one occupational therapist. The majority of patients are seen as referrals from either physicians or agencies. Out-of-town patients are lodged in a nursing home and brought to the clinic by taxi or ambulance. Since only one hospital in town has a physical therapy department, the therapist occasionally carries out treatment in the home or hospital until the patient has enough self-help to enable him to come to the clinic without too much effort. This regimen applies particularly to the hemiplegic and paraplegic patients.

Consultations with physicians in other specialties are requested as frequently as needed, and the thinking of the physicians working with the patient is correlated by telephone conversations, by written reports, and whenever possible, by complete staff conferences. Psychologic evaluations are performed in the offices of psychologists. Should psychiatric care be indicated this also is carried out on an outpatient basis. Social service is an integral part of the care of patients from Crippled Children's Division; private patients are referred to the Family Service organization when such help is needed. The vocational rehabilitation counselor acts to bridge the gap from clinic to job for his clients.

Within the clinic itself, daily staff meetings are held at which problems in therapy, patient adjustment, and job plans are discussed. Amputee clinic is conducted once a week, with therapists, prosthetists, vocational rehabilitation counselor aide and insurance reha-

TABLE 1

MEDICAL SOURCES OF REFERRED PERSONS

	Per Cent
Orthopedics	32
Internal medicine	28
Physical medicine	13
Neurosurgery	10
General surgery	10
Pediatrics	3
Plastic surgery	2
Psychiatry	1.5
Obstetrics—gynecology	.5

TABLE 2

TYPE OF DISABILITY AND SOURCE OF REFERENCES

Type of Disability	*Vocational Rehabilitation*	*Insurance and N.F.I.P.**	*Private*	*Crippled Children's Division*	*Total*
Amputee	79	4	6	2	91
Hemiplegia	6		19		25
Quadriplegia	2				2
Paraplegia	5		4	5	14
Peripheral nerve injury	5		4		9
Arthritis	3		21		24
Orthopedic					
Shoulder	2	3	57		62
Elbow		4	10		14
Wrist, hand		3	15		18
Whiplash		7	11		18
Neck, back		6	59		65
Finger		4	9		13
Foot, ankle		3	12		15
Knee			13		13
Hip			6		6
Burns	1	1			2
Chest (thoracoplasty, asthma, etc.)			2		2
Polio & Guillian-Barre	1	9	5		15
Neurosurgical: neck, back (discs—disc syndrome, postoperative)		4	11		15
Posture, scoliosis			13		13
Miscellaneous (Dupuytren's contracture, scleroderma, Bell's palsy, Erb's palsy, muscular dystrophy, cerebral palsy, etc.)			14		14
Totals	104 (23%)	48 (10%)	291 (65%)	7 (2%)	450

*National Foundation for Infantile Paralysis.

bilitation nurse in attendance. Patients from Crippled Children's Division with major rehabilitation problems, such as paraplegia, are considered at staff conference at regular intervals by the full complement of the rehabilitation team.

In order to determine the place this facility occupies in the community, a series of 450 consecutive patients were considered. Table 1 indicates the medical sources of referral. Patients seen under the sponsorship of such agencies as Vocational Rehabilitation, Crippled Children's Division and insurance companies are, of course, under the medical supervision of that agency but such is not indicated in the table.

Table 2 presents the various types of disabilities treated. These figures would not be typical of those found in all similar facilities, inasmuch as an excellent facility for treatment of poliomyelitis exists in close proximity, and cerebral palsy patients are managed either on a home program or in school therapy departments.

In table 3 the total number of amputees has been analyzed as to type of amputation and race. The types of treatments prescribed for the entire series are shown in table 4.

The difficulty of attempting to carry out adequate rehabilitation using widely separated team members and outpatient facilities is immediately apparent to any who have had contact with a well-organized center. That it is not an impossible task is illustrated by the case of B. C., a 15 year old boy who had a complete transaction of the spinal cord at D-10. Laminectomy was performed within a few hours and the physiatrist and urologist

TABLE 3

AMPUTEE BY DISABILITY AND RACE

Type of Disability	*Cases*
Below knee	24
Above knee	38
Bilateral leg	3
Hand	1
Below elbow	13
Above elbow	11
Shoulder disarticulation	1
Total	91
White male	38
Colored male	29
White female	11
Colored female	13
Total	91

TABLE 4

TYPES OF THERAPY EMPLOYED

Treatment	*Number Patients*
Physical therapy	246
Corrective therapy	70
Occupational therapy	2
P.T. & C.T. & O.T.*	29
P.T. & C.T.	43
P.T. & O.T.	58
C.T. & O.T.	2
Total	450

*P.T., C.T., and O.T., indicate physical, corrective and occupational therapy respectively.

called in consultation as the patient returned from surgery. Nurses were instructed in early care, and exercises and activity were begun and increased at the discretion of the team of doctors. The social service worker and public health nurse began the preparation of the family during the first few days. Daily treatment was given in the hospital, and at the end of three weeks the patient was able to move independently from his bed to his wheelchair and had begun standing in braces. He was then moved to a convalescent home, and was brought to the clinic daily for training in ambulation and activities of daily living. Urologic care was given in the doctor's office and at the convalescent home. Psychologic evaluation was done and the vocational counselor was called in for vocational aptitude testing. Because of irregularities in behavior several visits were made to a psychiatrist's office. Frequent conferences were held with the neurosurgeon, urologist, physiatrist, psychiatrist, social worker and public health nurse in attendance. B. C. was discharged with independent ambulation and elevation activities, complete self-help, automatic bladder and bowel control, and a fair emotional adjustment at 110 days after his accident. The total cost was $2,068.41.

While this record is impressive, it would be just as impractical to expend this amount of effort on each paraplegic as it would be to race Nashua and Shwaps every day. If, on the other hand, there had been one central facility, ten such patients could have been handled at the same time with a better outcome of emotional rehabilitation on the part of the patient, and certainly with less strain on the patient and the members of the team.

The rehabilitation center, therefore, represents first of all a situation in which an individual with a disabilty can meet with professional personnel who have knowledge of his disability and the means whereby to minimize it; where he can discuss his physical and emotional problems with others who have a similar disability, and thereby fortify his courage and add to his ingenuity. The center is a facility in which engineering skills are employed to develop apparatus which will improve residual abilities to the highest degree in the shortest time possible, and prepare the patient for a vocation. The rehabilitation center represents a teaching unit from which knowledge can be disseminated to those who contact patients in their homes, who can apply the methods and devices which have been developed, speeding convalescence and improving the end result of those who are not admitted for definitive care. Lastly, the center is a place in which physicians in every specialty can obtain supplementary care for their patients to augment their initial treatment.

Realistic objectives, skilled, understanding personnel, adequate physical plant and proper selection of patients will provide a desirable addition to the medical resources of a community and act as a nucleus from which rehabilitation knowledge can permeate throughout a wide area.

Sickness and Absence in Industrial Population*

ROBERT ALLEN WISE, M.D.,† *Houston, Tex.*

The factors accounting for absence from work are most important in industry. On the other hand their relationship to the person's mental and physical well-being are also important. The doctor in industry thus occupies a strategic position in the community welfare.

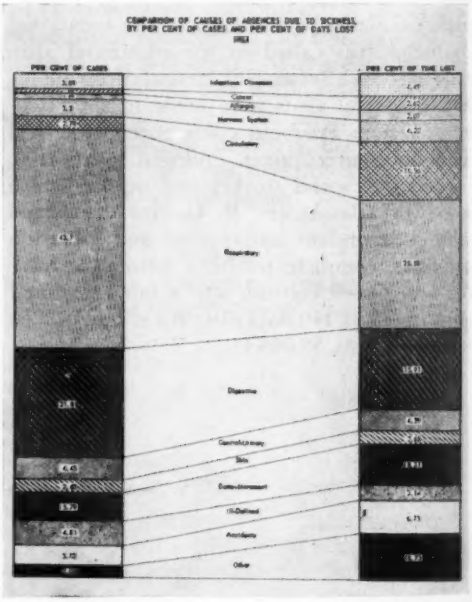
THE PHYSICIAN IN INDUSTRY has essentially the same problem relative to patients as does the man in general practice, when the patients of the latter are comparable to the limits of an industrial population. If the physician in general practice were to eliminate his patients under 16, a large percentage of his female patients, the extremely disabled, and the patients above age 65, he would have very nearly the same population group that carries on the work in most industries. However, the doctor in industry has a different though related point of view regarding these problems.

The industrial physician is able to do something about illnesses occurring in a large group of people when the technics for diagnosing trouble spots have been developed. In industry one has to use a different criterion for determining illness, namely, the inability to work, or the inability to work efficiently.

Industry's problems are not much different than those of a large family. To illustrate I cite an example where the families within several city blocks were studied in Baltimore to reveal some interesting data. There were 1,379 illnesses from all causes per 1,000 population. Of these illnesses, 53 per cent were nondisabling, the rest were for one day or more. Three hundred and sixty-five per 1,000 cases were confined to bed for one day or more. Fifteen and eight-tenths disability days per person per year, or 24.4 disabling days per disability case were found.

In industry we have similar disabilities. Using the International Nomenclature of Diseases, we have accumulated the following statistics over the last two years. There was little difference between 1953 and 1954. Figure 1 shows that acute short-term respiratory illnesses account for nearly 50 per cent of the cases, and that gastrointestinal disease ranks next. Frequency of absence is important in industry because it disturbs the work layout of a department or a foreman. Unexpected absences cause work shifts or a delay in work. In this group of gastrointestinal diseases, we find things which are not medical entities, and gastroenteritis which is not infectious. Among these complaints we find such things as dysmenorrhea, because a woman does not wish to state the real cause

FIG. 1



Comparison of causes of absences due to sickness by per cent of cases and per cent of days lost (1953).

*Read before the Section on Industrial Medicine and Surgery, Southern Medical Association, Forty-Ninth Annual Meeting, Houston, Tex., November 14-17, 1955.

†From the Department of Medicine, Baylor University College of Medicine, and the Humble Oil & Refining Co., Houston, Tex.

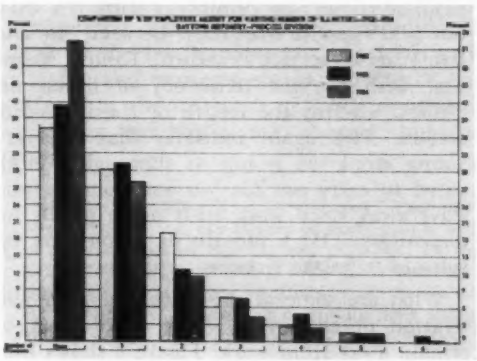
of her absence, and gastritis because of alcoholic indiscretion. This group may also represent various psychosomatic gastrointestinal disorders. Likewise, a complaint of acute respiratory illness does not always represent bacterial or viral disease. Hay fever or allergic rhinitis may appear as coryza and sinusitis not infrequently.

A physician in industry is in a particularly favorable position to see another aspect of medicine. He can tell when an employee has difficulty with his boss, when he has too much work, when he has associates whom he does not trust, or when he is forced into a position which is unsatisfactory to him. Many employees develop psychosomatic symptoms that follow a pattern which the observant physician can recognize as this person's response to stress.

I will discuss the employees frequently absent from another point of view. Several physicians have reported that the employees frequently absent establish a pattern early in their work environment and that it continues throughout their work life unless something is done to stop it. A psychiatrist in industry has stated that frank discussion of work requirements with most neurotic employees will bring about not only an improvement in their attendance at work, but also a general improvement in their health. Statistical methods can make it possible for the employees frequently absent to be identified by name and department. With this information the supervisor may discuss the employee's attendance record along with other matters of performance.

If the employee or the supervisor think there is a medical problem that accounts for his frequent absence, the supervisor can suggest that the employee check with the medical division or his own family physician, whichever is appropriate. The family physician, the company's medical division, or the family physician through the medical division, can determine whether or not these absences can be prevented by medical treatment or by motivation. Figure 2 shows what one large department in a refinery was able to do when the supervisor began to look at his employees' attendance records from a more realistic point of view.

FIG. 2



Comparison of per cent of employees absent for varying number of illnesses (1952-1954) Refinery Process Division.

A company's benefit program often has something to do with its absence record. A company which has sickness benefits from the first day of absence at full pay is likely to have a higher number of employees with short one to three day absences than a company which does not begin its benefits until after, say, seven days. This is exemplified in our own records by the fact that employees have to work one year with the company before they are entitled to sickness benefits. After that time, they are entitled to benefits

TABLE 1

COMPARISON OF LENGTH OF SERVICE AND EMPLOYEE DISABILITY AND NON-INDUSTRIAL ACCIDENTS—1953-1954

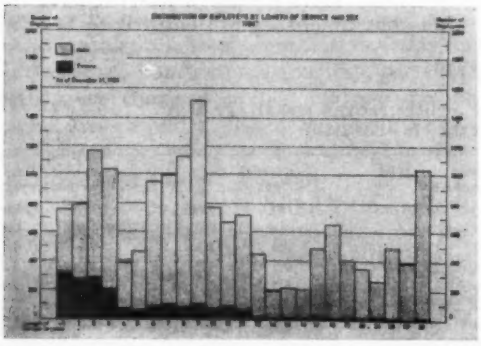
	Number of Employees		*Frequency per 1000 Employees*		*Average Days per Case*		*Average Days per Employee*	
Length of Service	*1953*	*1954*	*1953*	*1954*	*1953*	*1954*	*1953*	*1954*
Less than 1 year	924	753	802.0	309.4	2.4	2.0	1.9	0.6
1 to 4 years	3417	3372	1361.2	1558.1	3.0	2.8	4.1	4.4
5 to 9 years	5462	5042	1250.8	1239.6	4.7	4.2	5.9	5.2
10 to 19 years	4529	4742	1090.8	1115.6	6.7	6.3	7.3	7.1
20 to 29 years	3846	3970	821.9	768.0	10.6	10.3	8.7	7.9
30 and over	854	1035	680.3	679.2	13.1	12.8	8.9	8.7
Total	19032	18914	1098.5	1098.6	5.8	5.6	6.4	6.1

from the first day. A comparison of the sickness records of employees with less than one year's service with those between one and five years of service is shown. Table 1 shows that with age the frequency of illness decreases, whereas the length of the illness increases. This again indicates that the very young employee is not as thoroughly motivated to carry out his job and consequently stays away from work with many minor indispositions. High morale in a company results in a better sickness experience.

What are some of the factors in poor motivation of employees which cause them to remain away from work? Figure 3 shows that a large number of employees are young women who remain in the work environment for only two or three years, then marry and move into home life. Such an adult population is not primarily interested in a business career and consequently, if a job or pay is not threatened by their frequent absence, they are more likely to be absent for very insignificant things. This group of employees is more likely to lead irregular hours and be indiscreet in the intake of food and alcohol. They predispose themselves to the common respiratory and gastrointestinal illnesses. Here again is an area in which the supervisor can exert some influence by proper discussion of job requirements with the employee.

As we look at another set of illnesses, namely, the cardiovascular group, we see that the number of cases is not too great, but the aggregate loss of time due to this cause is considerable.

FIG. 3



Distribution of employees by length of service and sex (1954).

Myocardial infarction is the prime cause of loss of time in this group of disabilities. The doctor in industry, as well as the family physician, can influence these figures significantly but, more important, the health of the employee. The doctor managing the patient having had coronary thrombosis can begin very early in the recovery phase,—and over 90 per cent recover from the first attack,—to assure the patient that he will return to useful activity and probably his old job. There are still too many doctors who are overly cautious and pessimistic regarding recovery from myocardial infarction.

The doctor in industry can, working with the employee's personal physician, suggest to management the return of a "post-coronary" employee to work. If he is able to return to his old job the problem is simple; otherwise it may be complex. We believe the following procedure is most important. With the employee's permission, a conference with management alone, or a conference with management and the employee together, as well as with an employee relations representative, is arranged to discuss the work capabilities of this recovered employee. Often, modifications of the job can be made or, less commonly, a transfer to other work. Thus, the employee's usefulness to the company, himself, and to society is retained. Retraining of this group of employees is not done anywhere in industry as of today. A fertile field in rehabilitation suggests itself. These procedures reduce lost time.

Periodic health examinations often discover predisposing factors, and recommendations for remedial measures may delay or prevent cardiovascular conditions.

Alcoholism, as such, does not show up in diagnoses in industry, but is frequently masked as gastrointestinal disease, nervous disease, liver disease, accidents and many other conditions. Medical information is confidential and, without the employee's consent, alcoholism does not appear in the records which are used to compile these statistics. This, of course, makes it more difficult to help these employees in the early stages.

Machine records make it possible to define the illness pattern of a group of employees with common jobs. This might show a group to be outstanding in its sickness experience. This group could be studied in

detail to see if it was an accidental grouping of sickness-prone individuals, if improper supervision was a factor, or if there was a disease-producing factor in the environment. With this information, proper remedial measures could be recommended.

When one again looks at figure 1, reviews the medical textbooks, studies the didactic instructions given in medical school, or teaching in internship and residences, we note a very poor preparation for treating or managing these conditions which cause our greatest morbidity.

In *summary*, I have pointed out the similarity of the illness patterns in families and in industries. I have suggested methods of improving these experiences, including the role of the family physician, physician in industry, and management in industry. I have hinted at the influence of *esprit de corps* in industry and how it may change illness patterns.

No formal bibliography is arranged. The author has used ideas and experiences of many people which he has incorporated into his own thinking. To these people, he is indebted. He is particularly indebted to the Annuities and Benefits Division of the Humble Oil & Refining Company for compiling these statistics and to Mr. H. J. Stroud for arranging them.

Farm Injuries*

HOWARD E. SNYDER, M.D., *Winfield, Kan.*

The care of the greater number of farm accidents falls to the lot of the general practitioner or general surgeon who should be prepared to give adequate and proper emergency treatment.

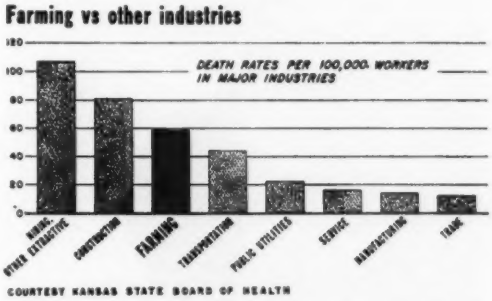
APPROXIMATELY ONE-FOURTH OF ALL WORKERS KILLED on the job in the United States are killed in farm work. There are over one million nonfatal farm injuries annually. Figure 1 shows the death rates per 100,000 workers in major industries in the United States during 1953. Farming is third with a rate of approximately 60 per 100,000. Figure 2 shows the death rates per 100,000 workers in Kansas in the period 1950 to 1954. In farming the death rate was only 32 per 100,000, approximately one-half that of the national rate. This difference may be attributed in part to the safety program for the farmer which has been inaugurated by the State Board of Health and other agencies in Kansas. In 1954, the Kansas death toll from farm work accidents was 50. This is equal to the all time record low established in 1952. The maximum annual toll since 1932 was 112 in 1934. The 50 farm work deaths in 1954 comprised 35 per cent of accident fatalities in all industries in Kansas.

*Read before the Section on General Practice, Southern Medical Association, Forty-Ninth Annual Meeting, Houston, Tex., November 14-17, 1955.

Fatal Accidents on the Farm

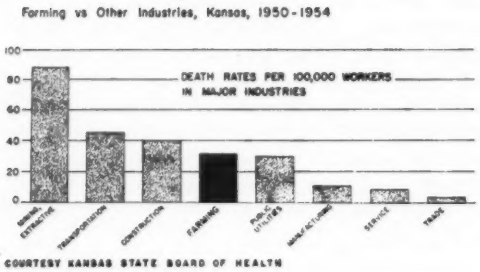
Figure 3 shows the farm work fatalities by manner of injury. The tractor accounted for 19 deaths and in 15 of these the tractor overturned. Other agricultural machinery ac-

FIG. 1



Accident death rates in major industries in the United States in 1953.

FIG. 2



counted for only 5 deaths, injury by animals 6 deaths, falling objects 4 deaths, burns, electrocution, heat and lightning, each 2 deaths and vehicular accidents only 1 death. The 19 fatal injuries from tractor accidents represented a decrease of 17 per cent from the total of 23 the previous year. Figure 4 shows deaths from tractor accidents and other farm machinery accidents in Kansas from 1930 to 1953. While tractor deaths have shown a very decided increase since 1940, deaths from other types of farm machinery have been definitely reduced. The year 1954 is not shown in this chart but the 19 deaths represent the lowest figure since 1947 when there were only 16 such deaths.

Nonfatal Injuries

In the four year period from 1951 through 1954, 145 individuals with occupational injuries were admitted to the surgical service of the Snyder Clinic in St. Mary's and Wm. Newton Memorial Hospitals. Of these, 61 individ-

FIG. 3

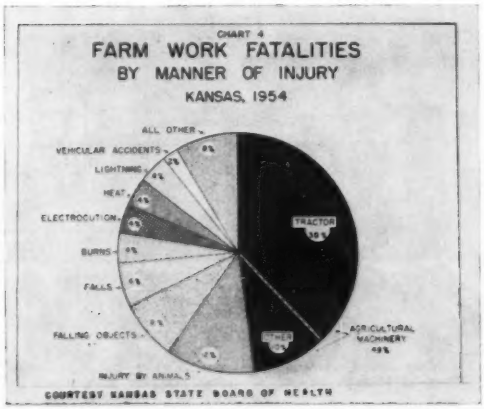
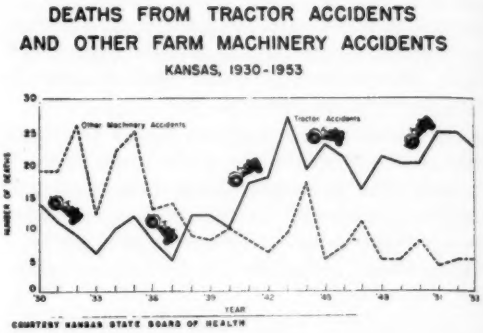


FIG. 4



uals or 42 per cent were injured in farm work (Table 1). The oil fields contributed 32 injuries, or 22 per cent, construction 18 injuries, or 12 per cent. Table 2 shows that of the 61 farm injuries, farm machinery accounted for 25, animals for 18, vehicles for 5 and other causes 13. Twenty-four of the occupational farm injuries occurred in the first two years of this period and have been previously reported.[1] In that period, 7 of 12 injuries due to farm machinery were tractor injuries. Of the 13 cases in the last two years reported now, only one was due to the tractor. While probably not significant statistically this decrease corresponds with the decrease in deaths due to tractor accidents reported by the Kansas State Board of Health.

Other farm machinery injuries in our series include three from the combine and one each from the corn picker, ensilage cutter, circular saw, ax, motor, hay hook, two-wheel trailer, bulldozer and log chain. Unspecified farm implements accounted for the three remaining cases.

Horses accounted for 12 of the injuries due to animals, and there was an additional injury inflicted by a colt; a calf was responsible in

TABLE 1

HOSPITAL ADMISSIONS FOR OCCUPATIONAL INJURIES, SURGICAL SERVICE, SNYDER CLINIC (1951 TO 1954, INCLUSIVE)

	Occupational Injuries
Farm	61
Oil field	32
Construction	18
Public utilities	4
Transportation	4
Others	26

TABLE 2

HOSPITAL ADMISSIONS FOR FARM INJURIES, SURGICAL SERVICE, SNYDER CLINIC (1951 TO 1954, INCLUSIVE)

	Farm Injuries
Machinery	25
Animals	18
Vehicles	5
Others	13

two instances, a cow in one and a boar and pigs in one other.

The wounds and injuries incurred on the farm vary just as widely as the inanimate and animate objects which cause them. They include the usual variety of fractures, sprains, lacerations, contusions and burns. They also include those severe injuries from blunt trauma with rupture of solid or hollow organs within the abdomen and crushing injuries of the chest which may result when a tractor overturns. They include the severely lacerated contused and contaminated wounds incurred when an extremity or any part of the body is caught and pulled into moving farm machinery.

It is the general practitioner or general surgeon who is most frequently called upon to care for these injuries. He must be prepared to promptly recognize and treat shock and to accurately appraise the extent and character of the wounds and injuries. Rupture of the liver occurs with at least the same frequency as rupture of the spleen. It has been reported[2] that of those with rupture of the liver, one-third die at the scene of the accident, one-third die within the first few days and only one-third survive. Prompt recognition and early emergency surgery would save some of those who die. Rupture of the spleen or of a hollow viscus may result from seemingly insignificant trauma. Knowledge that such may occur, plus the symptoms and signs, laboratory data and findings on peritoneal tap and radiologic examination, should insure early diagnosis. If one suspects that rupture of a viscus has occurred it is better to proceed with exploratory surgery immediately, than to wait until the diagnosis is obvious. A negative peritoneal tap, or radiograph should not delay surgery if other indications are present.

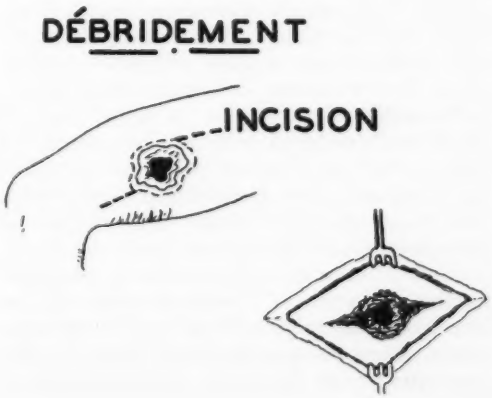
Treatment of Wounds

The severely lacerated, mangled and contaminated wounds which may be produced by farm machinery constitute another class of farm injuries and deserve special consideration. There is frequently much devitalized tissue and foreign material present in these wounds. There is usually contamination with clostridial organisms. Management must be directed toward the saving of life yet preservation of as much of the anatomic structure and function of the involved parts as is possible. In the management of such wounds the application of the principles of war and disaster surgery may be most desirable. The first of these is that thorough debridement of the wound must be accomplished. The second principle is that wounds should not be closed primarily when they involve the muscular parts of an extremity.

Adequate debridement of the wound means the careful surgical exploration of a wound with excision of all foreign material and devitalized tissue. It does not mean the mass excision of a body of tissue encompassing the entire wound tract. The bullet or shell fragment wound is the typical wound in war. It may be very easily compared with the wound produced by flying debris in a tornado, or secondary missiles in atomic blasts, or by primary or secondary missiles or objects which produce wounds on the farm. Most of us know the principles of thorough debridement, yet all have a tendency to slight these principles and to do an inadequate job.

Figure 5 shows a wound of the thigh which might have been produced by a shell fragment, a flying bit of wood in a tornado or

FIG. 5



some wounding instrument which was a part of some farm machinery. Such a wound should be enlarged by incisions as demonstrated in the figure, thereby permitting adequate exploration of the tissues deep in the wound. Placing the longitudinal skin incisions on a different plane at the superior and inferior aspects of the primary wound facilitates closure by delayed or primary suture, since it employs the principles of the Z-plasty utilized by the plastic surgeon. A very thin rind of skin, including the dirt impregnated therein, should be excised from about the edges of the wound. The skin about a wound should not be circumcised or needlessly sacrificed. Longitudinal incisions in the fascia above and below the wound should be made to permit adequate inspection and debridement of the underlying tissues. All devitalized fascia and all muscle which does not bleed when cut or contract when pinched should be excised. Completely detached fragments of bones should be removed. Bone with remaining periosteal attachment should be left within the wound. Certainly all foreign bodies and dirt must be removed from the wound. When the surgical cleanup of the wound is completed, the wound should be irrigated with a copious quantity of normal salt solution. The illustration shows the approach on one side of the thigh. If the wound is a perforating wound, similar incisions at both the wound of entrance and exit should be made. If the wound is badly contaminated, if the wound was incurred more than four hours before operation, or if incurred in war or disaster it must not be closed primarily. After the adequate excisional surgery or debridement is accomplished, fine mesh gauze, rayon, linen or silk whichever is available is laid into the wound. The wound must not be packed, since a pack will serve only to dam back secretions and to promote further destruction of the tissue. A single layer of fine mesh material laid into the depths of the wound and covered with flat pieces of surgical gauze and absorbent pads will serve as an adequate dressing. This should be supplemented with a plaster cast or a splint if indicated to achieve satisfactory immobilization of the limb. A wound so dressed can be left in its original dressing four to eight days. Then the patient can be taken to the operating room and under sterile precautions this dressing be removed. At that time, if the wound is clean and no dead tissue remains, it may be safely closed by suture or by split thickness skin grafts if necessary. If some dead tissue remains, and it can be completely excised, the wound may be closed after this secondary debridement has been accomplished. If, however, there is evidence of invasive infection the wound should not be closed but be treated with wet dressings. A culture should be made from the exudate and antibiotic and drug sensitivity of the organisms concerned, determined as a guide to antibiotic therapy. Closure is delayed until all evidence of infection has disappeared.

One of the directives issued from headquarters during World War II stated that "wounds shall not be closed primarily. No exceptions." There are exceptions to this rule. Wounds of joints are thoroughly explored, devitalized cartilage is excised, foreign bodies are removed, but at the completion of this debridement the synovia and capsule of the joint are closed. Sucking wounds of the chest are closed. Wounds of the skull are closed following adequate debridement, removal of foreign bodies, etc., by the neurosurgeon. In the case of the brain it is essential to achieve complete dural closure, even when the fascial grafts may be necessary to secure this. Wounds of the hand, with exposed tendons and nerves demand some attempt at early closure. A tight secure closure should not be sought. When a flap of skin has been denuded from the back of the hand, a few interrupted sutures, widely spaced may accomplish the necessary closure. Even in wounds of soft parts of the extremities, if a nerve or important blood vessel is exposed slight closure by approximation of muscle overlying it is indicated. But by and large, and in the case of most of the wounds in the soft parts of the extremities, no closure at all should be done. These wounds should be left open until one is certain that anaerobic infection or further loss of tissue is not going to occur.

There are many wounds incurred on the farm in which this method of management should be followed. Certainly, there are clean, lacerated wounds in which minimal debridement and early closure may be accomplished. On the other hand there are many dirty contused wounds which should be treated in the

same manner as wounds incurred in war or by mass casualties in civilian disasters.

Prophylaxis Against Tetanus

Immunization against tetanus and gas gangrene must be considered in all of the wounds incurred upon the farm. Those who have never had tetanus toxoid immunization must in most instances have tetanus antitoxin as protection against tetanus infection. In all cases skin-testing and eye-testing should be done for sensitivity to horse serum. The antitoxin should be diluted one to ten with normal saline, and only a very small amount should be injected intradermally, just enough to raise a tiny papule no larger than the head of a pin. One drop of this same one to ten solution may be dropped in the eye, at the same time. If both of these tests are negative one may proceed to give an immunizing dose of tetanus antitoxin. The usual dose in the past has been 1500 units. It is the feeling of many that with any wound demanding immunization against tetanus, 6000 units should be given initially. Certainly those patients in whom arteriosclerosis with peripheral arterial insufficiency is present should receive at least this much. Those with diabetes and those having poor circulation of the limbs from any cause should receive the larger dose of antitoxin. It has been customary to double the usual 1500 unit dose of antitoxin for every day that antitoxin administration is delayed beyond wounding. In a badly contaminated wound over 24 hours old, 10,000 units of antitoxin should probably be used.

Those who have served in the Armed Services since 1941 have all been immunized with tetanus toxoid. Many children have been immunized with tetanus toxoid in the past 10 to 15 years. Those who have received tetanus toxoid within four years are adequately protected if they are given a booster dose of toxoid. A majority of those who have been immunized against tetanus by toxoid injections will show a satisfactory response to a booster dose of tetanus toxoid even 10 years after the completion of this immunization program. However, in 10 to 20 per cent of individuals, the antibody response will be delayed for six to eight days before an adequate antibody level in the blood is attained. For this reason it is wise to use antitoxin as well as a booster dose of toxoid in those individuals whose last booster dose was more than four years prior to the injury for which they are being treated. The two substances should be given in separate syringes and in separate arms.

In those who have never been immunized by tetanus toxoid injection, the question of the establishment of permanent immunity comes up. For a time it was recommended that inauguration of active immunity should start at the same time as the administration of the antitoxin.[3] Recent work has shown that antitoxin probably inhibits the sensitizing effect of tetanus toxoid if the two substances are given at the same time. It is probably wise to delay the initial dose of toxoid for some four weeks following the administration of antitoxin. This does not apply to those patients in whom tetanus toxoid was given 5, 10 or even 15 years ago.

Anaerobic Infections

It was rather well demonstrated in World War II that gas gangrene antitoxin is of no value in the prophylaxis of gas gangrene. Adequate operation with delayed suture of wounds is the program which led to a diminution in the incidence of, and fatality from gas gangrene. The Fifth Army in Italy in World War II lost only one man in 1945 from gas gangrene. Prior to that time a number of lives were lost. The reduction in incidence and fatality can be attributed directly to the character of the surgery done in the forward hospitals in that area. By 1945, all of the hospitals and the surgeons therein had been thoroughly schooled in the principles of adequate wound debridement, delayed suture of wounds, and of the symptoms and signs of true gas gangrene or clostridial myositis. Gas gangrene is not of frequent occurrence. In both World War I and World War II, the incidence varied from three to 20 per 1000 wounded. The experience of any one individual surgeon is not big enough to warrant the drawing of conclusions concerning surgical management in the prophylaxis of gas gangrene. Adequate excisional surgery of contaminated wounds is essential. Leaving wounds open, anticipating delayed suture, is the second important step in avoiding this serious infection.

Every surgeon who deals with war wounds, disaster wounds, and wounds incurred on the farm should know the differential diagnosis of anaerobic cellulitis or localized gas abscess, and true gas gangrene or clostridial myositis. Limbs have been needlessly sacrificed in the past because an individual developing anaerobic cellulitis in a wound has been thought to have gas gangrene or clostridial myositis and an amputation performed. It is not generally known that there is a localized form of anaerobic infection due to the clostridia which very closely resembles clostridial myositis or true gas gangrene. It was known in the Mediterranean Theater and by the British as anaerobic cellulitis. It has been described by others as localized gas abscess and fasciitis. In such cases one may find gas bubbling from a wound, a foul odor and a gray slough of devitalized tissue in the base of the wound. But if one excises this devitalized tissue in the base of the wound and about its edges, one will encounter live healthy bleeding muscle which contracts when pinched and bleeds when cut. The involvement of fascia may go well beyond the actual area of trauma in the extremity. The muscle beyond the wound, however, is healthy. This is the real distinguishing point in the differentiation of anaerobic cellulitis and true gas gangrene. In true gas gangrene one encounters muscle which has lost its normal color and may originally appear as a salmon pink color but later a brickish red, purplish red and then black. This muscle does not bleed when cut, does not contract when pinched, and usually contains fine bubbles of gas. When muscle of this type is found well beyond the traumatized area of the wound, one can be certain one is dealing with clostridial myositis.

A direct smear from many wounds will show organisms resembling clostridia. This does not establish the diagnosis of gas gangrene. MacLennon[4] showed that 85 per cent of war wounds in the Middle East were contaminated with the clostridia, yet only 6 in 1000 wounded actually developed gas gangrene. The presence of a blob of air on an x-ray film does not indicate gas gangrene. True, the herring bone pattern of infiltrating gas throughout the entire muscle belly may be diagnostic in itself, but many x-ray films show a blob of air in compound fractures. This is air aspirated through the wound and not generated by clostridial organisms in the wound itself. The patient with gas gangrene will be sick, will have a pulse accelerated out of proportion to the fever, and will be apprehensive. The patient with anaerobic cellulitis may have slight fever but the pulse is not elevated out of proportion to the temperature. The real diagnosis of gas gangrene is made at the operating table.

Time does not permit exposition on wet and dry types of gas gangrene nor the details of treatment. Attention has been called previously[5] to the excellent articles on this subject by MacLennon,[6] Jergesen,[7] Hampton,[8] North,[9] and Lowry and Curtis.[10] Those who carry out surgical treatment of trauma will find them good reading and of great value in the prophylaxis, diagnosis and treatment of clostridial myositis or gas gangrene.

Summary

More occupational accidental deaths occur in farming than in any other major industry. Over one million nonfatal accidents occur yearly. Early recognition of intra-abdominal injuries from blunt trauma with prompt surgical intervention is stressed. Exacting initial surgery and particular attention to the prophylaxis of tetanus and gas gangrene is essential in the management of the lacerated contused and mangled wounds which may be incurred on the farm.

Bibliography

1. Snyder, H. E.: Trauma in Rural Areas, Postgrad. Med. 18:332, 1955.
2. Glenn, Frank: Management of Traumatic Injuries to the Biliary Tract, Am. J. Surg. (To be published.)
3. Lyons, C., Altemeier, W. A., Hampton, O. P., and Snyder, H. E.: Report of the Committee for the Study of Immunization as Prophylaxis for Tetanus and Gas Gangrene, Am. J. Surg. 87:482, 1954.
4. MacLennon, J. D.: Anaerobic Infection of War Wounds in the Middle East, Lancet 2:63, 94 & 123, 1943.
5. Snyder, H. E.: Surgery in the Prophylaxis, Diagnosis and Treatment of Gas Gangrene, Am. J. Surg. 86:479, 1954.
6. MacLennon, J. D., and Macfarlane, M. G.: Treatment of Gas Gangrene, Brit. M. J. 1:683, 1944.
7. Jergesen, F. H.: Anaerobic Infections, M. Bull. North African Theater of Operations 1:2, 1944.
8. Hampton, O. P., Jr.: Wounds of the Extremities in Military Surgery, St. Louis, C. V. Mosby Co., 1951.
9. North, J. P.: Clostridial Wound Infections and Gas Gangrene, Surgery 21:364, 1947.
10. (a) Lowry, K. F., and Curtis, G. M.: Diagnosis of Clostridial Myositis, Am. J. Surg. 74:752, 1947. (b) Pertinent Factors Influencing Repair in Traumatic Wounds, Am. J. Surg. 78:781, 1949. (c) Delayed Suture in the Management of Wounds, Am. J. Surg. 80:280, 1950.

Discussion (Abstract)

Dr. W. H. Anderson, Booneville, Miss. We should thank Dr. Snyder for bringing the subject of farm injuries to our attention at this time. This subject should demand the interest of every doctor and

should shock into action the complacency of every citizen.

Farming ranks third in accidental deaths in major occupations. If we would only begin today to attack the entire problem of accidental injuries and deaths it could be made a magnificent page of medical history.

The death toll of heart disease is four and one-half times that of accidental deaths, but the economic toll of accidental deaths surpasses that of heart disease.

Farm injuries are expensive, and only 57 per cent of the unfortunate injured on the farm have the money to pay their hospital and doctor. An estimate a few years ago indicated that each accident cost $160.

The working years lost from heart disease are figured at 1,680,000, from accidental deaths 1,750,000. Our farm population represents less than 10 per cent of the total and for farming to rank third in accidental deaths in major occupations is enough to stimulate the medical profession to action and to arouse the interest of every person.

We have heard a fine dissertation on the treatment of farm injuries, especially major wounds by the open method. But the challenge to the medical profession and to the people is to handle the farm injury problem. Prevention must be the first order of procedure. About half of the farm injuries occur in the barn or in the barnyard. The man handling mules should know that their heels cannot be trusted. The one operating a farm machine should know something about the mechanics and the dangers of same. The person operating farm machinery should be examined for physical defects, mental attitudes, and sobriety.

The time element is very important in treating farm injuries just as it is in operating for acute appendicitis. The time to repair a perineal laceration is one minute after the baby is born. A very large per cent of farm injuries can and should be repaired immediately after they happen; the results will be better and there would be a great saving from an economical standpoint.

Seventy-one per cent of motor vehicle accidents occur in the rural communities, along the highways and in the fields and so the availability of doctors and hospitals is important. This is not yet enough. Provision must be made so that the injured person on the farm can enter the hospital at once. Many of these farm victims are indigent. Insurance is helping along this line, but many do not or cannot have the insurance. Then there should be provided a fund to take care of the indigent injured.

We trust that the discussion of farm injuries today will be the beginning of plans to solve the problem.

Pain Patterns in Peptic Ulcer: Clinical Application*

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The pain patterns in peptic ulcer may clearly indicate whether the lesion is limited to the involved viscus, or whether penetration or invasion of adjacent tissue has occurred. Thereby prognosis in terms of medical or surgical management may be anticipated.

Introduction

THE PRESENTING PROBLEM of the vast majority of patients having peptic ulcer is pain. This may be described as mild epigastric distress, a burning or gnawing sensation, or an actual pain of varying character and intensity. Although healing of the ulcer is the ultimate aim of treatment, the immediate objective of the physician is relief of the patient's distress. Once the patient is symptom-free, however, he is inclined to neglect his prescribed regimen and to resume his usual diet and activities, being little concerned about the ulcer in his stomach or duodenum. It is well known that relief of pain may antedate healing of an ulcer by days or weeks. The wise physician, therefore, is hesitant to accept symptomatic recovery as evidence of healing and insists upon prolonged treatment until he is reason-

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ably sure that the ulcer crater has healed entirely.

Most patients having peptic ulcer present no particular problem. The diagnosis and intelligent management of the difficult or complicated case, however, is dependent upon a clear understanding of the neuro-anatomy and neurophysiology of the structures of the upper abdomen, as well as the various pain patterns which occur in peptic ulcer.

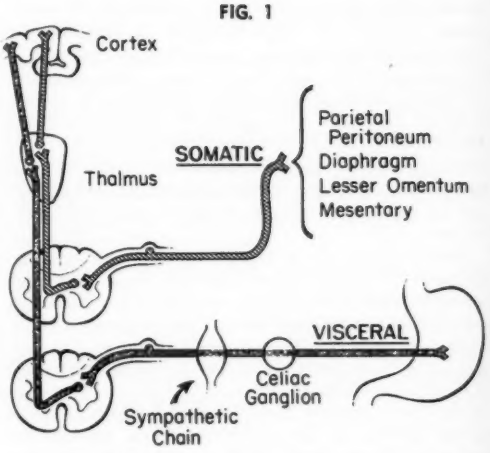
Neuro-anatomy and Neurophysiology

Both the efferent and afferent nerve impulses arising in the upper abdomen are transmitted over three general pathways: the parasympathetic or vagus, the sympathetic or splanchnic, and the somatic or intercostal.[1]

Physiologically the major function of the vagal fibers in the upper abdomen is that of stimulating gastrointestinal motility and secretion, hence it transmits primarily motor impulses. Although it probably contains some sensory fibers from the thorax, there is good evidence that it does not carry sensory impulses from the upper abdomen. For example, stimulation of the proximal end of the severed vagus causes no sensation in the conscious patient. Likewise, the pain patterns of gallbladder disease or recurrent ulcer are not altered by complete bilateral vagotomy. On the other hand, there is every reason to believe that all painful stimuli from the upper abdomen are transmitted over the sympathetic and intercostal nerves. Interruption of the sympathetic pathway at any level results in complete relief of visceral pain. Also division of the intercostal pathway at any level abolishes somatic pain.

The afferent impulse of visceral pain is transmitted uninterruptedly through the celiac ganglion, over the greater splanchnic nerve, through the sympathetic chain, and the dorsal root ganglion, making its first synapse in the posterior horn (Fig. 1). From here it travels by way of the spinothalamic tract to the thalamus and thence to the sensory cortex. The afferent impulse of somatic pain is transmitted directly over the intercostal nerves through the dorsal root, through synapses in the posterior horn, and proceeds to the brain in the same pathway as that of the visceral afferent impulses. This close anatomic relationship of visceral and somatic fibers in the

FIG. 1



posterior horn is the probable explanation for referred pain by the so-called "overflow" mechanism. For illustration impulses of visceral pain of sufficient intensity from an uncomplicated ulcer, can overflow into adjacent somatic neurones in the posterior horn and be perceived not only as visceral pain in the anterior abdomen, but also as somatic pain in the chest or back.

Visceral Pain

Visceral pain is vague, ill-defined, and often difficult to describe. It results from distention or spasm of a hollow viscus or by traction upon the mesentery. Chemical, mechanical, thermal or electrical stimuli do not usually give rise to this type of pain. However, experimental work by Wolf[2] has suggested that chemical and mechanical stimuli may produce pain if the mucous membrane is engorged or inflammed.

Somatic Pain

The parietal peritoneum, the body wall, the diaphragm, the mesentery and the lesser omentum have a rich supply of pain fibers from the intercostal nerves. Pain impulses in these nerve endings arise from the usual stimuli (chemical, mechanical, electrical or thermal) and the resulting painful sensation is well-defined and accurately localized. An unusual location or radiation of pain from an ulcer is usually due to direct involvement of these somatic nerve endings rather than to somatic overflow from stimulation of visceral fibers.

In summary, there are two general pathways by which painful impulses are transmitted from the upper abdomen to the brain: (1) the sympathetic and (2) the intercostal. Thus, there may be two components to any upper abdominal pain, namely visceral and somatic. This concept is of the greatest importance in the evaluation of ulcer pain.

Mechanism of Ulcer Pain

The mechanism of uncomplicated ulcer pain is a controversial subject, and numerous theories have been proposed. Many investigators feel that pain results from irritation of nerve endings in the ulcer crater by acid gastric juice.[3] Others believe that increased peristaltic activity, muscle spasm, or altered motility (dyssynergia) produce pain.[4,5,6] In all probability both of these factors play a part in the mechanism of pain. Certainly acid is an adequate stimulus and neutralization usually results in relief of pain. It does not follow, however, that acid is the sole factor. The fact that immediate relief of pain following intravenous administration of an anticholinergic drug without change in the concentration of acid of the stomach argues strongly against the acid theory and supports the concept of altered motility. Observations, using acid barium and studying the patient fluoroscopically, have demonstrated that altered motility is invariably present. It is our belief that hydrochloric acid in the presence of an inflammed gastric mucosa results in dyssynergia and pain.

Clinical Application

For convenience, ulcer pain has been classified into four separate categories: (1) visceral; (2) visceral with somatic overflow; (3) visceral and somatic, and (4) somatic only.[7,8] It is realized that this is an arbitrary classification but has proven helpful in the management of the ulcer patient.

FIG. 2

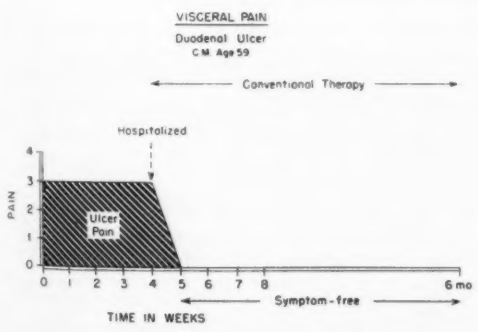
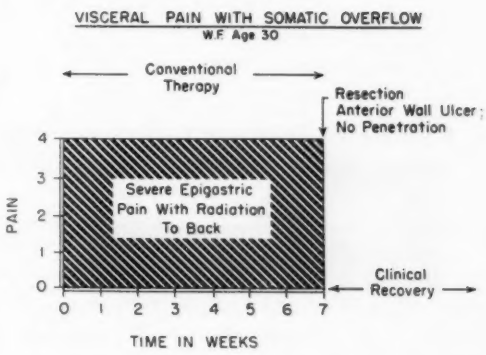


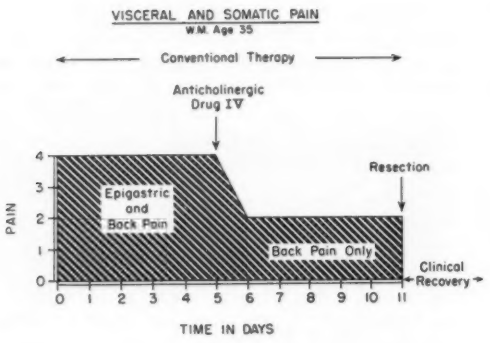
FIG. 3



(1) *Visceral Pain.* The pain of a simple, uncomplicated ulcer is visceral in type and is located in the general vicinity of the epigastrium, regardless of the anatomic location of the ulcer. Referring to the discussion of mechanism of pain, one would expect visceral pain to be relieved by removal of the stimulus, by abolishing motility, or by raising the pain threshold. It is for these reasons that conventional treatment of the uncomplicated ulcer is so highly effective. Visceral pain is promptly relieved by ingestion of food or antacids, by vomiting or aspiration of stomach contents, and by administration of anticholinergic drugs. Such cases are not surgical problems. A case report illustrating this type of pain is shown diagrammatically in figure 2.

(2) *Visceral Pain with Somatic Overflow.* In the patient whose ulcer is more severe and yet has not penetrated to the serosa or formed a walled-off perforation, the problem is more difficult. These patients may have visceral pain with somatic overflow. The somatic overflow may be perceived as pain in the back or in any portion of the chest wall. This type of ulcer is more severe and always requires intensive treatment. Since both components of pain are visceral in origin, such ulcers usually respond to strict medical management in the hospital, supplemented by anticholinergic drugs given parenterally. Occasionally sur-

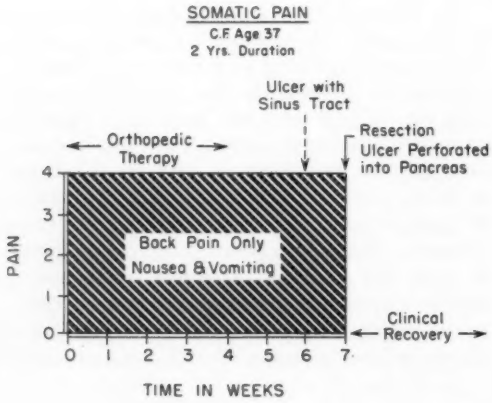
FIG. 4



gery is required, as illustrated diagrammatically in figure 3.

(3) *Visceral and Somatic Pain.* The pain pattern in a patient having a penetrating or perforated walled-off ulcer may be bizarre. When an ulcer erodes through the gastric or duodenal wall into surrounding structures, two components of pain are usually manifest. In such patients we recognize visceral pain which is located in the epigastrium and somatic pain which arises from involvement of the intercostal sensory fibers in the area of perforation. Therefore, when the pain in a patient with peptic ulcer radiates to the back, the shoulder or around the rib cage, and is unrelieved by strict medical treatment, such a complication should be suggested, and prolonged medical care is unwise. Again referring to the discussion of the mechanism of pain, visceral pain in these cases may be relieved by the usual measures, whereas pain arising from an inflammatory mass would not be affected by administration of antacids or anticholinergic drugs. If, after five to seven days of intensive hospital care with anticholinergic drugs administered parenterally and constant gastric suction, the epigastric pain has subsided but the back and chest pain persists, it is extremely doubtful that such patients will recover under medical management and operation should not be delayed, as illustrated in figure 4.

FIG. 5



(4) *Somatic Pain.* Occasionally, a walled-off perforation, complicating duodenal or gastric ulcer may be manifested by somatic pain only, and because of the greater frequency with which ulcers erode posteriorly into the pancreas, the pain usually is located in the low thoracic area of the back. Often patients with such an ulcer will be seen on the orthopedic service, and may be subjected to an unnecessary myelogram or laminectomy or even treated with a brace or cast, as illustrated in figure 5.

Summary

In summary, mild or moderate epigastric distress is indicative of visceral pain of an uncomplicated ulcer. These patients respond promptly to medical management and are not surgical problems. Back, shoulder, or chest pain usually indicates pain of somatic origin arising from a penetrating or perforated walled-off ulcer. In general such cases respond poorly to medical treatment and often require surgery. However, those patients having a similar clinical picture from visceral pain with somatic overflow may do well under medical treatment and, therefore, should be given the benefit of intensive medical care before resorting to surgery.

Bibliography

1. Hollinshead, W. Henry: Anatomic Pathways for Pain from the Upper Part of the Abdomen, Proc. Staff Meet. Mayo Clin. 28:385, 1953.
2. Wolf, S., and Wolff, H. G.: Human Gastric Function, ed. 2, New York, Oxford University Press, 1947.
3. Palmer, W. L.: Mechanism of Pain in Peptic Ulcer: A Reply, Am. J. Med. 18:513, 1955.
4. Bloomfield, A. L.: Mechanism of Pain in Peptic Ulcer, Am. J. Med. 17:165, 1954.
5. Ruffin, J. M., Baylin, G. J., Legerton, C. W., Jr., and Texter, E. C., Jr.: Mechanism of Pain in Peptic Ulcer, Gastroenterology 23:252, 1953.
6. Cecil, Russell L., and Loeb, Robert F., eds.: A Textbook of Medicine, ed. 9, Philadelphia, W. B. Saunders Co., 1955. "Mechanism of Pain in Peptic Ulcer," p. 864.
7. Smith, Lucian A.: Pain Patterns in Diseases of the Upper Part of the Abdomen, Proc. Staff Meet. Mayo Clin. 28:394, 1953.
8. Smith, Lucian A.: Pain Patterns in the Diagnosis of Upper Abdominal Diseases, Collect. Papers Mayo Clin. 45:65, 1953.

The Uses of Air in Ophthalmic Surgery*

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The use of air injected into the anterior chamber of the eye has uses both in treatment and as an aid in ophthalmic surgery.

AIR WHEN INJECTED into the anterior chamber of an eye has a number of important properties. It is a gas and, as such, occupies space and exerts a certain pressure. It has the properties of compressibility and expansion. It is not readily absorbed and does not escape through the normal drainage channels from the eye. It is transparent, but its index of refraction is that of ordinary air and not that of water or the transparent media of the eye. There is a boundary of surface tension between air and water which causes an enclosed air bubble to attempt to become spherical. Air is lighter than water and accordingly it will always be the upper layer of the two media. The vapor pressure of gas in the eye remains above that of the surrounding tissues, and therefore, the components of the air bubble tend to absorb. Increase in the intra-ocular pressure speeds the absorption of the gas. Practical application can be made of some of these properties, and it is the purpose of this paper to discuss several conditions in which air has been used advantageously by members of our group.

In Traumatic Hyphema

The first condition to be discussed is that of traumatic hyphema. Forcible compression of an eye either with or without penetration may result in various structures within the eye being torn loose. If blood vessels are broken, blood will escape and mix with the fluids of the eye, the aqueous, the vitreous, or both humors. Sufficient blood may escape into the anterior chamber to clot and cause secondary glaucoma and blood staining of the cornea. Following the original injury, secondary hemorrhage in several days is quite common. This may possibly be influenced by contracture of the clot in the ruptured blood vessels and also by the hypotony of the eye. This secondary hemorrhage, which usually occurs by the fifth day, can be quite severe and result in loss of vision in an eye that otherwise seemed to be doing well.

For the past five years in our clinic, all eyes in which there is gross hemorrhage into the aqueous have had air injected into the anterior chamber. All patients are hospitalized and strict bed rest is required. Sedatives, calcium, and vitamins K and C are given. Superficial wounds are cleaned and treated as indicated. Corneal lacerations are sutured air tight using Grieshaber needles. Prolapsed iris, when present, is excised. Blood clots when they form a complete cast of the anterior chamber are removed by a limbal section and the wound tightly sutured. In penetrating wounds antibiotics are used locally and systemically. Cortisone and ACTH have been used when the eye showed inflammatory reaction. Both miotics and mydriatics are avoided, especially when the eye has not been penetrated. The uninjured eye is left open and at times both eyes. We believe that these measures are important, but insofar as the prevention of bleeding is concerned we believe that filling the anterior chamber with air is most important. This air fills a space which then cannot be filled with blood. It exerts pressure possibly collapsing thin walled and leaking vessels. Its elasticity prevents sudden changes in intraocular pressure which might open up a thrombosed blood vessel. A relative pupillary block may occur, causing a rise in pressure and a narrowing of the chamber angle. In eyes that are filling with blood this may be a good

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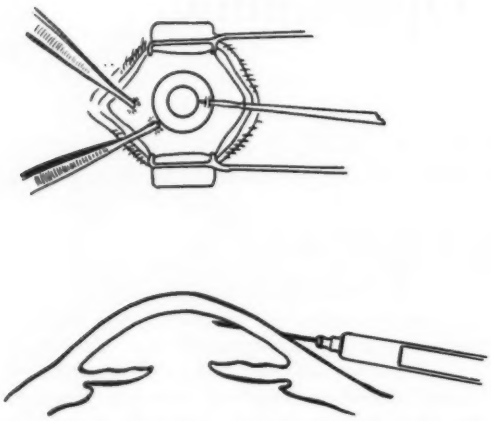
FIG. 1



Technic of injecting air into the anterior chamber.

thing during the five days of greatest danger.

Our technic of injecting air has varied somewhat as ideas adopted from various authors have been tried. Essentially, though, it is that described by Dr. Chandler in the *Symposium on Glaucoma* in 1948. At the present time, in a cooperative patient, we inject the air without using akinesia or a retrobulbar injection. The eye is thoroughly numbed with 0.5 per cent Pontocaine topical anesthesia. A speculum is inserted. Novocaine is injected over the medial rectus tendon and near the limbus at 4 o'clock for the right eye and 8 o'clock for the left eye. The assistant uses two Castroviejo fixation forceps and secures good fixation in the insertion of the rectus tendon and at the limbus below. The operator takes a small Wheeler knife and, holding it parallel to the plane of the iris, starts within the limbus at a point opposite the external canthus and makes a slanting puncture through the cornea until the blade has entered the anterior chamber. The knife is withdrawn. Air has previously been sterilized in the autoclave within a lubricated 2 cc. syringe. This syringe with a blunted point, 27 gauge needle attached, is now used, the needle being held in the same line of direction as the knife and inserted partially through the corneal tract (Fig. 1). Pressure on the plunger expels air into the anterior chamber. As large a bubble as possible is instilled and the needle quickly withdrawn. On succeeding days, if necessary, more air can be injected through this same corneal tract. In children general anesthesia is used. In apprehensive patients, akinesia and a retrobulbar injection of Novocaine may be employed. To date there have been no complications from this procedure.

Results. The results of our first 36 cases were reported by Wilson[1] in 1954. In that series no eyes were completely lost. Only two initially seen prior to the development of complications had secondary hemorrhages, and these were controlled.

Table 1 gives the results in 58 cases of nonperforating traumatic injuries seen since that report was written. Three eyes, or 5.2 per cent, have been totally lost. One of the eyes lost was in a child seen 9 days after the original injury, who had suffered severe pain in the interim. The examination of this child on admission revealed severe glaucoma and an anterior chamber completely black with a blood clot. An operation was done to remove the clot and air was injected. No further bleeding occurred but the eye became phthisical and was enucleated. The second eye lost was in a man who had hemophilia. The third eye lost and eventually enucleated was a previously injured and blind eye.

Of the 55 eyes that were saved, 42, or 76 per cent, have vision of 20/30 or better. Thirteen have impaired vision due to associated injuries not directly the result of bleeding into the eye. Of these 13, one has subsequently had the cataract removed and has 20/20 vision with aphakic correction.

Of the 55 eyes that were saved, not one has blood staining of the cornea and only one currently requires treatment for glaucoma.

TABLE 1

RESULTS OF 58 CONSECUTIVE CASES OF TRAUMATIC HYPHEMA TREATED WITH AIR INJECTION

		Number of Cases	*Percentage*
Eyes totally lost		3	5.2
Eyes having vision 20/30 or better		42	72.4
Eyes having impaired vision due to associated injuries		13	22.4
Cataract	6		
Macular scars	2		
Vitreous opacities	2		
Pre-existing amblyopia	1		
Rupture of choroid	2		
Total		58	100.0

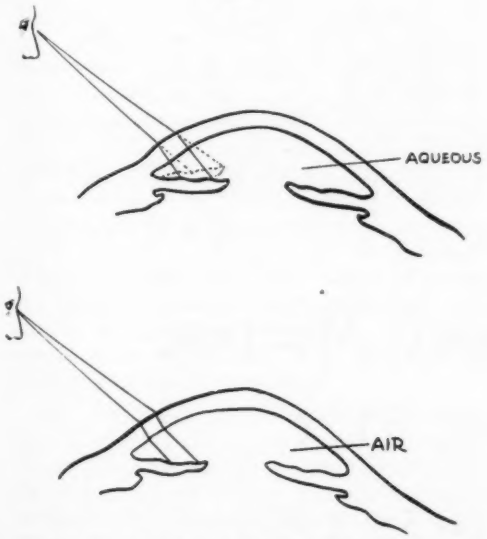
As an Aid at Operation

A second condition in which air in the anterior chamber has been of help is in making keratome incisions. Iridencleisis is an excellent operation for chronic glaucoma not controlled medically. Pathologic study of eyes in which this operation has failed often shows that the section was made too far forward with subsequent closure of the filtration channel. The preliminary injection of air into the anterior chamber greatly helps to make a properly placed section. In the first place, a good-sized air bubble can actually deepen the chamber and push the iris backward. In the second place, air within the anterior chamber changes the optics of the eye (Fig. 2). The iris no longer has its apparent forward displacement, but appears farther back, which actually it is. This helps to eliminate the tendency to aim too far forward for fear of catching the iris on the keratome tip.

Following the iridencleisis more air can be injected through the corneal tract to prevent postoperative bleeding. Corneoscleral trephination is little used by our group, but here again air injected into the anterior chamber has a great merit.

A third condition in which air is of value is in conjunction with cyclodialysis. Barkan,[2] in 1938, demonstrated the value of air in this operation. In 1942, Randolph[3] devised a special instrument to inject air during the operation. In our cases we have preferred to inject the air preoperatively as an extra help against bleeding during the operation and to increase visibility of the chamber angle. After the eye is sutured shut we inject more air through the corneal tract, as in traumatic hyphema. We have felt that this air definitely decreased bleeding. One other benefit from the air bubble derives from the fact that air will rise to the top. With the patient's head properly positioned the air will enter the surgical cleft and keep this space open until the air has absorbed.

FIG. 2



The optical effect of air in the anterior chamber.

Following Cataract Extraction

A fourth condition in which injection of air is a valuable aid is in the cases in which the anterior chamber becomes flat postoperatively, after cataract extraction, and remains so without evidence of a persistent leaking wound. In eyes that have had a flat chamber longer than 7 days an appreciable percentage subsequently develop glaucoma due to peripheral anterior synechia closing the filtration channels. The treatment of these cases is a study in itself, but I do wish to emphasize that injecting air by the technic described and, if desired, combined with posterior sclerotomy, can be a great aid in restoring a normal chamber.

A somewhat similar condition is one in which the vitreous herniates through the pupil and comes in contact with the posterior surface of the cornea. If this condition is allowed to remain clouding of the cornea develops. An air bubble can often push back the vitreous and disrupt the development of this condition.

Congenital cataract is another condition in which air can be employed to great advantage. In incising the anterior capsule, we often have been troubled by the chamber collapsing before a complete job was done. With air in the anterior chamber, possibly because of its surface tension, there is less tendency for it to leak around the needle knife and allow the lens to collapse against the cornea. Air injected after the operation prevents anterior synechia to the corneal wound and peripheral anterior synechia. Also, by its gradual absorption, it seems to delay

the development of glaucoma from the swelling lens substance. When the lens cortex has become fluffy, we do a limbal section, a complete iridectomy, and wash out the cortex. Air is again instilled after the wound is tightly sutured.

In Glaucoma

In acute, narrow-angle glaucoma, iridectomy is the operation of choice. Occasionally one will see a neglected case which fails to respond to medical treatment preoperatively, and after operation the chamber remains so flattened that the pressure remains greatly elevated. This is a form of malignant glaucoma. I recall one case of this sort several years ago that finally responded to a posterior sclerotomy, a cyclodialysis, and air injection into the anterior chamber. In recent years, for acute glaucoma, our technic has been to make a corneal tract before doing the iridectomy *ob externo*. In an eye with a high pressure this seems to partially decompress it. After the iridectomy wound is tightly closed air is injected, reforming the anterior chamber. To insure that the air stays in front of the iris only a medium-sized bubble is used. With the head in various positions this can be used as an agent to spread open the chamber angle.

Discussion

There are other uses of air which are worth mentioning and used by ophthalmologists:

Air may be used after cataract extraction, and especially if vitreous has been lost, to push the main body of the vitreous back from the wound. It may be used after corneal injuries to prevent anterior synechia and also to prevent hyphema. After goniotomy air may be injected to keep apart the raw surfaces of the newly opened angle. Injected into Tenon's capsule air may be an aid in radiography. Air may be injected into the vitreous after operation for retinal separation.

Having mentioned some of the benefits of air, I should add a word of caution. O'Brien[4] has pointed out the danger of air getting behind the iris and causing glaucoma. Barkan[2] and Scheie[5] have independently observed air causing seclusion of the pupil with iris bombé and glaucoma. These complications can best be prevented by carefully avoiding the use of too much air and by proper positioning of the head.

Summary

Air has certain properties which make it useful in the surgical treatment of some eye conditions. It helps to prevent secondary hemorrhage in cases of traumatic hyphema. By deepening the chamber and altering the optics, it facilitates making a proper keratome section for iridencleisis. It helps to prevent bleeding in cyclodialysis. It is useful in restoring the anterior chamber after iridectomy for glaucoma and in maintaining the anterior chamber while needling congenital cataracts. Several other uses were also mentioned.

Bibliography

1. Wilson, John M., McKee, Thomas P., Campbell, E. Malcolm, and Miller, George E.: Air Injection in the Treatment of Traumatic Hyphema, Am. J. Ophth. 37:409, 1954.
2. Barkan, Otto: Cyclodialysis, Multiple or Single, with Air Injection, Am. J. Ophth. 30:1063, 1947.
3. Randolph, M. Elliott: A New Cyclodialysis Instrument, Am. J. Ophth. 26:187, 1943.
4. O'Brien, C. S.: Discussion of paper by Hughes, W. L., and Cole, J. G.: Technical Uses of Air in Ophthalmology, Tr. Am. Ophth. Soc. 43:115, 1945.
5. Scheie, Harold G., and Frayer, William: Ocular Hypertension Induced by Air in the Anterior Chamber, Tr. Am. Ophth. Soc. 48:88, 1950.

50th Anniversary Meeting

Washington, D. C.

November 12-15, 1956

EDITORIALS

THE BASIC TREATMENT OF RHEUMATOID ARTHRITIS

A foundation upon which therapy of rheumatoid arthritis with newer methods may be built may be described as basic treatment.[1] This is an inclusive term embracing standard methods which common sense teaches are worth while for relief in the arthritic patient. The tendency to neglect this phase of treatment may have arisen from the temptation in the busy attending physician to avoid the work it requires. Contrary to the sales spiel for a language manual the writer once fell for, "Speak Spanish without Study or Effort," the basic treatment of arthritis requires a good deal of both study and effort. First, the patient should be carefully studied. This is written to remind the doctor of his duty both to spend the time required in establishing the diagnosis, and then to outline the treatment beginning with proved fundamentals.

The principal differential entity in diagnosis is osteoarthritis, the chronic degenerative joint disease of advancing years. In a general way it may be said that osteoarthritis involves the spine, fingers, knees, and shoulders, while rheumatoid arthritis involves the ankles, elbows, wrists, and also small joints. The patient with osteoarthritis appears well, the symptoms being localized to the joints. Rheumatoid arthritis being a general or systemic disease makes the patient quite ill with muscular weakness and atrophy. Many present a glossy skin with hyperemia of the thenar and hypothenar eminences; subcutaneous nodules occur in about 20 per cent of patients. The erythrocyte sedimentation rate usually is markedly accelerated. These are the principal diagnostic points. The agglutination of group A hemolytic streptococci with serum from the patient is considered by some to be rather specific, and is desirable when this type of laboratory service is available.[2]

The magnitude of the problem of rheumatoid arthritis is so great that the doctor is challenged to be aggressive and determined in his therapy. This disease has an estimated incidence of 2,740,000 cases in the United States, the patients losing 38,880,000 days from work annually.[2] Therefore, this great incidence invites increasing interest. The basic treatment includes orientation of the patient, diet, general hygiene, rest, exercise, treatment of foci of infection, physical therapy, psychotherapy, and the prevention of deformity.[1]

If the condition is clearly explained to the patient, he will co-operate better in treatment. During the initial conference one may gain the patient's understanding to such degree that he will not go to charlatans or waste funds needlessly. Points in the prognosis that provide hope are the fact that spontaneous cures occur, and that in other cases it may terminate with minimal permanent disability.

Diet is prominent in the patient's mind. Since the patient usually is undernourished, six daily feedings should be rich in protein with adequate vitamin support. Stomachics and bitters are indicated to combat the associated poor appetite. The exception to the rule, the obese patient, will require reduction, with care being exercised to maintain dietary balance.

General hygiene includes such obvious precautions as avoiding exposure to cold temperatures and contact with infectious diseases. In connection with atmospheric temperatures the patient may raise the question of climate. A location that has limited changes in the barometric pressure lessens the joint pain. Management of the bowel may require much attention. The cathartic habit should be prevented or broken by the inclusion of laxative foods in the diet. Success in this regard will often require much encouragement and repetition on the part of the attending physician.

Rest and exercise are coupled. Considerable observation may be required to balance these properly. In the acute stage of a severe case bed rest, excepting bathroom privileges, may be needed for six weeks or more. When the disease is mild two daytime rest periods may suffice. Splinting with posterior moulded plaster of Paris casts will provide local rest of the joint. Exercise varies from muscle setting in the severest case, to light physical work in the mild case. The limits of tolerance are to be obeyed. Joint pain immediately after

active exercise is usually not of consequence but increased soreness the next day is a signal to lessen the activity.

Eradication of foci of infection is indicated to favor the general health. Judgment should be exercised as to the proper time to remove infected tonsils or teeth.

Physical therapy is a very valuable adjunct, but it is most difficult to direct the family in carrying this out. The prevailing tendency seems to be to massage an affected part too vigorously, to force active exercise beyond the limits of tolerance, or to burn the patient. When these measures are abused the resulting discomfort prompts the patient to discontinue this phase of treatment. However, when properly gauged, gentle massage, tolerated active exercise, and the judicious use of heat will enhance all phases of the treatment.

Psychotherapy will pay dividends if intelligently used. Encouragement must be repeated and varied according to the resourcefulness of the physician. Emotional and anxiety situations aggravate this disease. They may be relieved by allowing the patient to discuss his family or other problems, if the doctor will take time to be the father confessor.

The prevention of deformity will probably have already been begun by the splinting of the local part to provide rest. Poor positions in sleeping may favor deformity and therefore should be corrected. Traction on adhesive straps applied to the skin, such as the Russell type for the knee and hip, may be advantageously employed. Should deformity progress orthopedic consultation should be sought.

When the above points have been executed well and tailored to the individual patient, one is ready to consider more specific medication. This offers a wide category, and includes the standard salicylates, colloidal gold, phenylbutazone, cortisone and related corticosteroid drugs. It is the part of wisdom to pay meticulous attention to the fundamentals of basic treatment before grasping at a "miracle" from the yet incompletely evaluated new drugs.

STANLEY A. HILL, M.D.

References

1. Hill, Donald F.: Basic Treatment in Rheumatoid Arthritis, M. Clin. North America 39:393, (March) 1955.
2. Committee of the American Rheumatism Association: Primer on the Rheumatic Diseases, 1953.

CRYOGLOBULINEMIA AND GANGRENE OF DIGITS

Before 1947, there were a few references in the literature to proteins which might be precipitated spontaneously from the serum especially when cooled. In that year Lerner and Watson[1] reported an unusual instance of purpura occurring upon exposure to cold in a person shown to have a cold precipitable serum globulin. It was their proposal that this protein be designated cryoglobulin. They[2] subsequently carried their studies further to learn the frequency of this abnormality and its relationship to known diseased states. In the following years cryoglobulins were shown to be not uncommon in cases of multiple myeloma, kala azar, malaria, rheumatoid arthritis and subacute endocarditis. This abnormal globulin has also been reported in smaller amounts in portal cirrhosis, hepatitis, tuberculosis, coronary artery disease, chronic glomerulonephritis, rheumatic heart disease, disseminated lupus, gout and a few other diseases. If the protein is present in larger amounts sludging of blood seems to occur and probably accounts for retinal hemorrhages, epistaxis, and deafness at times. Cryoglobulin accounts for spontaneous agglutination of red blood cells with rouleaux formation and an increased sedimentation rate. Gelatinous material has been found within the blood vessels at postmortem examination in cases of cryoglobulinemia.

In 1950, Barr[3] and his associates reported two patients who had symptoms associated with exposure to cold. One had recurrent purpuric skin lesions under such circumstances, the other had numbness, mottling, pain and pallor in the extremities. Cryoglobulin was present in these patients.

Hutchinson and Howell,[4] in 1953, found cryoglobulinemia in a patient who showed Raynaud's phenomena progressing to gangrene with resultant multiple amputations. This patient had had seven admissions to the hospital, six of them were for symptoms which developed after exposure to cold. Histologic studies of the amputated digits are described by these authors.

In 1955, Myerson and Stout[5] described three patients who complained of sensitivity to cold and who developed gangrene of finger tips and who had cryoglobulinemia.

From these reports it appears that clinicians

must entertain the potentialities of intravascular precipitation of cryoglobulins upon exposure to cold. This phenomenon may need to be considered in the differential diagnosis upon occasion in patients showing cold sensitivity expressed in Raynaud-like manifestations, urticaria, purpura, mottling of the distal portions of extremities and other skin lesions. Attention has been directed to retinal hemorrhages, progressive deafness, epistaxis and gingival bleeding. In retrospect this newer knowledge may explain the "cold allergy," which included some of these phenomena, described in the literature of twenty-five years ago.

It seems from these recent reports that cold agglutinins have no relationship to the phenomena which have been described. Since the origin of the hyperglobulinemia in certain of the diseases associated with cryoglobulinemia is unknown, the same holds true for this abnormal globulin. Undoubtedly work in the future will explain the disturbances which occur in the globulin fraction of the serum in those diseases characterized by such abnormalities. Though some of the patients showing cold sensitivity and cryoglobulinemia in high amount have been instances of subclinical multiple myeloma, this is not true of others.

Cryoglobulinemia presents a fascinating possibility in certain clinical instances of vascular occlusion following exposure to cold.

EDITOR

References

1. Lerner, A. B., and Watson, C. J.: Studies of Cryoglobulins. I. Unusual Purpura Associated with the Presence of a High Concentration of Cryoglobulin (Cold Precipitable Serum Globulin), Am. J. M. Sc. 214:410, 1947.
2. Lerner, A. B., Barnum, C. P., and Watson, C. J.: Studies of Cryoglobulins. II. The Spontaneous Precipitation of Protein from Serum at 5°C. in Various Disease States, Am. J. M. Sc. 214:416, 1947.
3. Barr, D. P., Reader, G. G., Wheeler, C. H.: Cryoglobulinemia. I. Report of Two Cases with Discussion of Clinical Manifestations, Incidence and Significance, Ann. Int. Med. 32:6, 1950.
4. Hutchinson, J. H., and Howell, R. A.: Cryoglobulinemia: Report of a Case Associated with Gangrene of the Digits, Ann. Int. Med. 39:350, 1953.
5. Myerson, R. M., and Stout, R. E.: Cryoglobulinemia Associated with Gangrene of the Digits, Am. J. M. Sc. 230:499, 1955.

MEDICAL EDUCATION WEEK

There will be a nationwide observance of Medical Education Week, April 22-28. The program is sponsored by the National Fund for Medical Education, American Medical Association, American Medical Education Foundation, Association of American Medical Colleges, A. M. A. Women's Auxiliary and the Student A. M. A.

The objectives of the Week will be three: "(1) to focus national attention on the significance of medical education and the problems of medical schools; (2) to bring home to the public the contributions of medical science to American life; and (3) to foster public interest, through wide public knowledge, in the private support of medical education." An attempt will be made to attain these objectives through the use of newspapers, radio and TV interviews, open-house at medical schools, and talks before civic and fraternal groups.

For some years the financial plight of the medical schools has been serious. The cost of medical education comes high. Private schools in particular, subsisting on an income in devalued dollars from philanthropic endowment, have felt the pinch. It seemed that the medical schools not subsidized by tax money would sooner or later fall into the hands of government much to the distress of the American Medical Association and the Association of American Medical Colleges.

Appreciative of the importance of keeping the medical schools free, the National Association of Manufacturers, in 1951, passed a resolution which read, "Essential to the perpetuation of the American way of life is a system of education which includes both privately and publicly supported schools, colleges and universities. The privately supported institutions are in a critical financial plight. The public institutions, state and local, are likewise having serious financial difficulties. Industry recognizes the essential contributions made by these institutions to the development of leadership . . . and the development of social and civic competence of our citizenry." To implement this philosophy this organization formed the National Fund for Medical Education, having as its objective the annual raising of money from private sources. To this Fund have come contributions from big and small business, from organized labor and other private sources.

At the time of the birth of the Fund, the American Medical Association began its contribution to medical schools through its American Medical Education Foundation. All of us through our A. M. A. dues have contributed annually $500,000 since 1951. Furthermore, doctors have contributed addi-

tional dollars either through bulk gifts by their state association (California Medical Association $25,000 and Utah State Medical Association $15,000 recently) or as individual contributions. The latter have varied from individual contributions by 64 per cent of the doctors in Illinois, in 1953, to less than one per cent in some states. (In 1953, the number of contributions in the states in the Southern Medical Association varied from a maximum of 202 to a minimum of 12 in another state.) The A. M. A. has hoped to build its annual contribution to medical education through the American Medical Education Foundation to $2,000,000. Many physicians in planning for their income tax assessments remember this Foundation in their gifts to reduce income taxes. The monies of the Fund and Foundation are pooled and distributed to the schools on the basis of the number of students enrolled. Thus the 13,000 physicians of Illinois who contributed almost $200,000 in 1953 provided many dollars for medical education in the South. Unquestionably, the money contributed to the American Medical Education Foundation will increase as the Women's Auxiliary of the state medical associations are increasingly taking up such money raising as one of their projects.

The Southern Medical Association contributes annually $1,000 to the American Medical Education Foundation. While this amount is small, it is a token of appreciation and approval of the Foundation's effort to adequately finance medical education within the concept of free enterprise.

These two agencies, the National Fund for Medical Education and the American Medical Education Foundation, have raised an average of $2,500,000 annually; their combined goal is $10,000,000, the amount needed to aid the 81 medical schools in continuing medical education at present standards. They are therefore sponsoring the Medical Education Week with objectives outlined above to educate the public in the hope of awakening continuing support to keep the medical schools free. The need for this was so well put by President Eisenhower, "Only if our medical schools remain financially solvent can we hope to place medical education on a sound basis, free from the threat of government-sponsored plans or schemes to control it." A statement by a former A. M. A. president, Dr. Elmer Henderson, seconds this, "Our medical schools are among our greatest bulwarks of freedom. But they are heavily dependent upon us for support."

In the Oath of Hippocrates to which we all subscribe we read, "I shall look upon him who taught me the art as one of my parents. I shall regard his offspring as my brethren. I shall teach them this art." Yet it is a strange though an undoubted fact that only a small proportion of the medical profession maintain interest in medical education and medical schools after they have become established in practice. By the nature of his work the doctor must to some degree become an individualist and egoist and this probably accounts for his disregard for the Hippocratic injunction to "look upon him (The Alma Mater) who taught me the art as one of my parents."

Medical Education Week should stimulate the physician to look into the matter of medical education, its costs and the needs of the medical schools. During this Week he probably will be called upon to answer questions posed by his patients and lay friends and acquaintances. Perchance he will be asked to take part in some of the planned

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activities. Thus Medical Education Week may well be an education to the doctor who, after graduation, comes to think of his school as a dusty ivory tower. It may bestir him to play his part in assuring his sons or grandsons a free atmosphere in which to earn an M.D. degree.

EDITOR

25 YEARS AGO

Insulin Angina*

"Probably no remedy in the past generation has received as much attention from every conceivable angle as has that of insulin. Since its introduction by Banting, McLeod and Best in 1923, the entire treatment of diabetes mellitus has revolved around indications, contraindications, dosage and numerous other phases of insulin administration. In the six-year period from 1923 to 1929 there are listed in the Quarterly Cumulative Index Medicus more than 1,000 articles concerned with insulin therapy. It is, therefore, inevitable that in the chaotic wake following the introduction of methods of such a decidedly revolutionary scope that many conflicting views and opinions should arise.

"No better example presents itself than the present controversy in regard to the proper management of that group of diabetic patients suffering from such cardiovascular complications as myocardosis, angina pectoris and coronary arterial disease of greater or lesser degrees of severity. The clinical picture of the middle aged individual with a long previous history of diabetes held more or less in check by a moderate though not absolutely scientific dietary regime who is suddenly projected from a state of hyperglycemic complacency into the throes of an acute coronary attack following an injection of insulin is, by now, a not unfamiliar incident. To many such individuals, the development of this stenocardial syndrome is a new and obviously not a pleasant experience; to the doctor, however, this may be a totally unanticipated complication fraught with sinister possibilities.

"The constant factor of glycosuria coupled with the difficulty entailed in securing blood chemistry information by the rank and file of the profession stimulates the desire for a therapeutic shortcut and amelioration of the more obvious diabetic symptomatology. Failing to achieve a sugar-free urine through dietary measures, the temptation to resort to this powerful agent is overwhelming and it is small wonder, therefore, that insulin enjoys such a widespread and, perhaps, promiscuous usage. No one is more cognizant of this fact than Banting himself, who in a recent conversation with one of us at the University of Toronto stressed the fact that diabetes, today, is a much overtreated disease.

"The association of diabetes with degenerative changes of the vascular system has long been known, ... Apparently, the entire arterial tree from its very source at the aorta to the terminal filaments of the capillary circulation may be involved as a result of the chemical imbalance engendered by the diabetic syndrome. The coronary arteries are no exception. . . . .

"The incidence of diabetes in coronary thrombosis is relatively high; Levine in a recent study of 145 cases found that about 24 per cent were suffering from various degrees of diabetes. . . . In our series of 89 cases of coronary thrombosis there were 22 patients with definite diabetic symptoms. Of this group of 22, seven had severe coronary seizures following the administration of the initial first day dosage of insulin. A review of these cases is interesting in pointing out the difference of clinical response to this substance in individuals suffering from coronary arterial changes. . . . We have been impressed beyond a doubt with the ill effects of insulin in such cases as far outweighing the temporary benefits to be expected in mitigating the course of diabetes; in fact, we have seen one fatal instance and several almost fatal results following its use. . . .

"In the series of cases reported here, coronary occlusion followed as a result of insulin therapy. Speculations as to the exact physiologic mechanism responsible for these seizures have been based upon the lowered blood sugar levels following the use of insulin. In a heart already impoverished by coronary pathology, the withdrawal of the most important factor in myocardial tissue metabolism unquestionably leads to a further physiologic imbalance. If the current theory of anoxemia is to be given credence, heart pain is the result of lowered nutritional intake on the part of the heart muscle. . . . The present conception of heart pain still revolves around the functional competency of the coronary vessels.

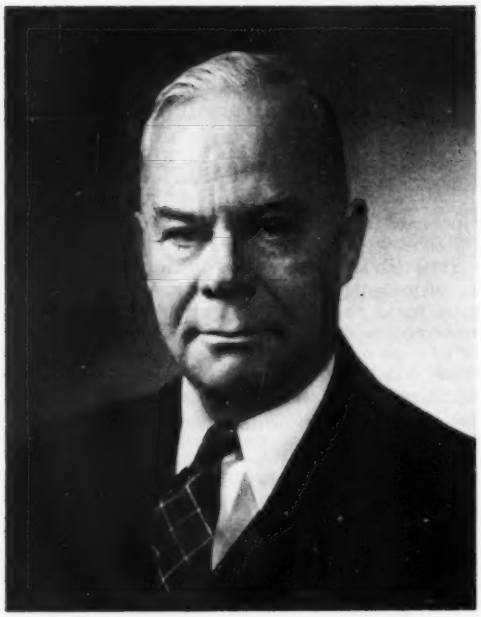
"In a heart already adjusted to high sugar levels, partial stenosing of the coronary arterial tree may give no symptoms until a sudden change is brought about by the physiologic action of insulin. . . .

". . . . Where arteriosclerosis is known to be present careful examination of the heart should be routinely undertaken before insulin therapy is started. Electrocardiographic studies may be of the utmost value. . . . In the cases quoted, coronary arterial disease was unsuspected until the clinical syndrome of occlusion had fully developed; all of these cases suffered coronary seizures but a few hours after insulin administration. It is interesting to note that in none of these cases did the blood sugar levels fall below the so-called margin of safety. For this reason, the attacks cannot be regarded in the light of hypoglycemic shock. . . .

"Where diabetes is complicated by known cardiovascular factors we have studiously avoided insulin therapy until all dietary measures have failed to produce results commensurate with safety."

*Parsonnet, A. E., and Hyman, Albert S.: Insulin Angina. The Development of the Stenocardial Syndrome Following the Administration of Insulin in Diabetics with Coronary Thrombosis, Ann. Int. Med. 4:1247, 1931.

THE PRESIDENT'S PAGE



It is customary for your President to be given a page in our *Journal* several times a year to keep you informed about the progress and plans for our annual meeting. This is indeed a great privilege and I deeply appreciate this opportunity to bring to you my message.

This year we celebrate our Golden Anniversary and quite naturally, we are planning to have the biggest and best meeting we have ever held. We will meet November 12-15, 1956, in Washington, D. C., so please start *now* making your plans to attend. Come and bring your family so that they may have the opportunity to see all of the sights, not only of our Nation's Capitol, but also many nearby points of interest such as the Naval Academy, Mount Vernon, Williamsburg and many other historical attractions.

The Southern Medical Association was organized October 2, 1906 in Chattanooga, Tennessee, and we are making plans to have a meeting in Chattanooga on October 2nd and 3rd with appropriate ceremonies to commemorate the occasion. Mr. C. P. Loranz has been made Chairman of the committee to plan the Chattanooga meeting. There is no one who knows as much about the Southern Medical Association as he, having been associated with it since 1912 and most of this time as Secretary-Manager. Therefore, this celebration is in good hands and we can expect a great meeting.

The Executive Committee of the Southern Medical Association met in Birmingham on January 21, 1956 where most of the plans for our annual meeting were discussed and necessary committees appointed to make the arrangements for our Washington meeting.

On February 4, 1956, your President, Dr. Morris Reese, Chairman of the Council, Dr. Harry Lee Claud, Councilor from the District of Columbia, Mr. C. P. Loranz, Mr. Robert Butts and Mrs. Esther Russell, representing Mr. V. O. Foster from headquarters, met in Washington, D. C. with officers and members of the District of Columbia Medical Society to outline plans for our Golden Anniversary Meeting. Dr. Oscar B. Hunter, Jr., General Chairman for this meeting, reported that most committees are already appointed and functioning. Another meeting is planned for May 1 to complete details.

Because the District of Columbia Medical Society has very graciously given up their annual meeting to cooperate with us, our first day's meeting will be designated "D. C. Day." There will be two general sessions, one in Medicine and one in Surgery and all papers will be presented by members of the District of Columbia Medical Society. Tuesday, Wednesday and Thursday will be given over to the Sections and you can be assured there will be something to interest everyone, no matter what your specialty.

Last year in Houston we sponsored a Symposium on Geriatrics. This was such a wonderful success that we are having another one this year. Dr. Milford O. Rouse, Dallas, Texas, will be the moderator. Dr. Fount Richardson, Fayetteville, Arkansas and Dr. Joseph S. Stewart, Miami, Florida, are other members of the Geriatrics Committee. If you wish to participate or have any particular subject you would like to have included and discussed in this symposium, kindly contact Dr. Rouse or one of his associates on the Committee.

EVERY MEMBER COME AND BRING A NEW MEMBER TO WASHINGTON.

Sincerely,

W. RAYMOND MCKENZIE, M.D.

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BOOKS RECEIVED

Diagnosis and Management of Urological Cases. By Bruce W. T. Pender, M.B., B.S., F.R.C.S., Senior Surgical Registrar, St. George's Hospital, London; and James O. Robinson, M.A., M. Chir., F.R.C.S., Senior Surgical Registrar, St. Bartholomew's Hospital, London. 166 pages. Baltimore: The Williams & Wilkins Company, 1955. Price $5.00.

Diseases of the Chest. By H. Corwin Hinshaw, M.D., Clinical Professor of Medicine, Stanford University School of Medicine; and L. Henry Garland, M.B., B.Ch., Clinical Professor of Radiology, Stanford University School of Medicine. 686 pages, 634 illustrations on 288 figures. Philadelphia: W. B. Saunders Company, 1956. Price $15.00.

A Modern Pilgrim's Progress for Diabetics. By Garfield G. Duncan, M.D., Clinical Professor of Medicine, Jefferson Medical College. 212 pages. Philadelphia: W. B. Saunders Company, 1956. Price $2.50.

Psychopathology of Children with Organic Brain Disorders. By Lauretta Bender, M.D., Professor of Clinical Psychiatry, New York University College of Medicine. 144 pages. Springfield, Illinois: Charles C. Thomas, Publisher, 1956. Price $5.50.

Diagnosis and Treatment of Vascular Disorders (Angiology). Edited by Saul S. Samuels, M.D., President, Angiology Research Foundation; Director of Angiology and Attending Vascular Surgeon, Brooklyn Hebrew Home and Hospital for the Aged, and Chief of Department of Peripheral Arterial Diseases, Stuyvesant Polyclinic Hospital, New York. 607 pages. Baltimore: The Williams and Wilkins Company, 1956. Price $16.00.

Shock and Circulatory Homeostasis. Transactions of the Fourth Conference. Edited by Harold D. Green, M.D., Professor of Physiology and Pharmacology, and Associate in Internal Medicine, Bowman Gray School of Medicine. 266 pages. New York: Josiah Macy, Jr. Foundation, 1955. Price $5.00.

Your Blood Pressure and How to Live With It. By William A. Brams, M.D. 160 pages, illustrated. Philadelphia: J. B. Lippincott Company, 1956. Price $2.95.

Roentgen Interpretation of Fractures and Dislocations. By Joseph Levitin, M.D., Chief, Department of Radiology, Mount Zion Hospital, San Francisco, and Ben Colloff, M.D., Associate Chief, Department of Orthopedic Surgery, Mount Zion Hospital. 230 pages, illustrated. Springfield, Illinois: Charles C. Thomas, Publisher, 1956.

A Course in Practical Therapeutics. By Martin E. Rehfuss, M.D., Professor of Clinical Medicine, Emeritus, and Director of the Division of Therapeutics in the Department of Medicine, the Jefferson Medical College, Philadelphia; and Alison H. Price, M.D., Associate Professor of Medicine, the Jefferson Medical College. Third edition, 938 pages. Baltimore: The Williams and Wilkins Company, 1956. Price $15.00.

Current Therapy, 1956. Edited by Howard F. Conn, M.D. 607 pages. Philadelphia: W. B. Saunders Company, 1956. Price $11.00.

Psychopathology of Childhood. Edited by Paul H. Hoch, M.D., New York State Psychiatric Institute; and Joseph Zubin, Ph.D., New York State Psychiatric Institute. Proceedings of the Forty-fourth annual meeting of the American Psychopathological Association, June, 1954. New York: Grune & Stratton, 1955. Price $6.00.

Diseases of the Endocrine Glands. By Louis J. Soffer, M.D., Clinical Professor of Medicine, State University of New York, College of Medicine. Second edition. 1006 pages, 102 illustrations and 3 colored plates. Philadelphia: Lea and Febiger, 1956. Price $16.50.

Christopher's Textbook of Surgery. Edited by Loyal Davis, M.D., Chairman of the Department of Surgery, Northwestern University Medical School. Sixth Edition. 1446 pages, 1359 illustrations on 716 figures. Philadelphia: W. B. Saunders Company, 1956.

Joint FAO/WHO Expert Committee on Meat Hygiene. First Report. World Health Organization: Technical Report Series, 1955, No. 99; 52 pages. Price $0.60. Also available in French and Spanish.

Practitioners' Conferences Held at The New York Hospital-Cornell Medical Center. Volume 3. Edited by Claude E. Forkner, M.D., Professor of Clinical Medicine, Cornell University Medical College. 293 pages. New York: Appleton-Century-Crofts, Inc., 1956. Price $6.75.

Experimental Tuberculosis. Bacillis and Host. Edited by G. E. W. Wolstenholme and Margaret P. Cameron. Ciba Foundation Symposium. 387 pages, 69 illustrations. Boston: Little, Brown and Company, 1955. Price $9.00.

A Guide to Psychiatric Books. By Karl A. Menninger, M.D., Director of the Department of Education, The Menninger Foundation, Topeka, Kansas. Second Revised Edition. 144 pages. New York: Grune & Stratton, 1956. Price $4.75.

A Follow-up Study of World War II Prisoners of War. By Bernard M. Cohen, Ph.D. Statistician, Follow-up Agency, Division of Medical Sciences, National Research Council, and Maurice Z. Cooper, M.D., Department of Medicine and Surgery, Veterans Administration, Washington. 81 pages. Published by the Department of Medicine and Surgery, V.A., Washington, D. C.: U. S. Government Printing Office, 1954. Price $1.50.

Thallium Poisoning. By J. J. G. Prick, Professor of Neurology and Psychiatry, University of Nijmegen; W. G. Sillevis Smitt, Professor of Neurology, University of Utrecht, and L. Muller, Industrial Physician, Enschede, The Netherlands. 144 pages. Houston: Elsevier Publishing Co., 1955. Price $3.95.

Introduction to Hepatic Surgery. By Henry Gans, M.D., Surgical Resident, Cincinnati, Ohio. 256 pages. Houston: Elsevier Publishing Co., 1955. Price $12.00.

Magic, Myth and Medicine. By Donald T. Atkinson, M.D., SC.D., LL.D., F.A.C.S., F.I.C.S. 313 pages. Cleveland & New York: The World Publishing Company, 1956. Price $5.00.

A Manual of Fractures and Dislocations. By Barbara Bartlett Stimson, M.D., Director of Department of Bone and Joint Surgery, St. Francis Hospital, Poughkeepsie, N. Y. Third Edition, 209 pages, 97 illustrations. Philadelphia: Lea & Febiger, 1956. Price $4.50.

Practice in Radiotherapy. Under the General Editorship of Sir Ernest Rock Carling, LL.D., F.R.C.S., F.R.C.P. Consulting Surgeon, Westminster Hospital; B. W. Windeyer, M.C., B.S., D.SC., F.R.C.S., F.R.A.C.S., F.F.R., Professor of Radiology, University of London and D. W. Smithers, M.D., F.R.C.P., F.F.R., Professor of Radiotherapy, University of London. 516 pages. St. Louis, Mo.: The C. V. Mosby Company, 1955. Price $20.00.

The Biliary Tract. By Julian A. Sterling, M.D., Staff Surgeon, Albert Einstein Medical Center and the Graduate Hospital. Baltimore: The Williams & Wilkins Company, 1955. Price $10.00.

Life Stress and Essential Hypertension. By Stewart Wolf, M.D., Professor and Head, Department of Medicine, University of Oklahoma School of Medicine; Philippe V. Cardon, Jr., M.D., Senior Assistant Surgeon, National Institute of Mental Health; Edward M. Shepard, M.D., Instructor in Medicine, Cornell University Medical College, and Harold G. Wolff, M.D., Professor of Medicine (Neurology), Cornell University Medical College. 245 pages. Baltimore: The Williams & Wilkins Company, 1955. Price $7.50.

SOUTHERN MEDICAL NEWS

ALABAMA

Dr. Louis L. Friedman, Birmingham, has been named coordinator of the poliomyelitis vaccine program for the state of Alabama.

Dr. Charles Alston Thigpen, Montgomery, has recently celebrated his 90th birthday.

Dr. Wyatt Heflin, Birmingham, the oldest living alumnus of Jefferson Medical College of Philadelphia, received a large bouquet from the alumni in honor of his 95th birthday.

ARKANSAS

Dr. Fount Richardson, Councilor of the Southern Medical Association from Arkansas, testified recently before the Senate Finance Committee against H. R. 7225. He appeared in behalf of the Arkansas State Medical Association.

Dr. Pearl Waddell, Fort Smith, has become associated with the Holt-Krock Clinic.

Dr. Guy U. Robinson has been elected president of the Dumas Chamber of Commerce. In addition to this and his many medical society duties, he is an alderman on the Dumas City Council.

Dr. Paul Jeffery, Bethesda, has been honored by his home community for his outstanding career of forty-five years in the practice of medicine. Dr. Jeffery was presented a wrist watch at the gathering of more than four hundred people.

Dr. Gerald G. Robertson has become a member of the staff of the Newport Hospital and Clinic in Newport. He will be associated with Drs. T. E. Williams, H. M. Baird and Wayne Stanfield. Dr. Robertson will do chiefly obstetrics and pediatrics.

Dr. Donald I. Purcell, Paragould, has been named president of the Greene-Clay County Medical Society. Dr. Jim Bethell, Piggott, will serve as vice-president. Dr. Earl D. McKelvey has been re-elected secretary.

The Pulaski County Medical Society has elected Dr. Ellery C. Gay president for the 1956 term. Other officers include: Dr. Jerome S. Levy, president-elect; Dr. Alfred Kahn, Jr., vice-president; Dr. R. M. Blakeley, recording treasurer; and Dr. H. Ray Fulmer, recording secretary.

Dr. Harold Short, Beebe, was elected president of the White County Medical Society. The other new officers are: Dr. T. A. Formby, Searcy, vice-president, and Dr. Hugh Edwards, Searcy, secretary.

The Crittenden County Medical Society has elected Dr. Ralph Hamilton, West Memphis, president for the coming year. He succeeds Dr. A. C. Parker of Clarkdale. Dr. W. J. Wright, Earle, has been re-elected vice-president and Dr. Milton Lubin, Turrell, has been renamed secretary-treasurer.

The Arkansas State Board of Health recently honored Dr. Edward D. McKnight, Brinkley, for his 25 years of service as a member of the board. Dr. McKnight was presented a plaque by the Board.

DISTRICT OF COLUMBIA

Dr. Benjamin Karpman, Chief Psychotherapist at St. Elizabeth's Hospital, has been named Editor-in-chief of a new journal, *Archives of Criminal Psychodynamics.*

Dr. Thomas McPherson Brown, Professor of Medicine at George Washington University School of Medicine, was honored as Alumnus of the Year at the annual alumni meeting of the Sidwell Friends School.

Dr. Joel B. Hoberman has been appointed chief of the department of anesthesia at Suburban Hospital.

Dr. June Carol Shafer was elected to the Board of Directors of the American Academy of Dermatology and Syphilology. Dr. Shafer is an Associate member of the District Medical Society.

FLORIDA

Dr. Hawley H. Seiler, Tampa, was renamed secretary-treasurer of the Southern Thoracic Surgical Association.

Dr. Carl H. Wells, Jacksonville, has succeeded Dr. Robert Y. H. Thomas as medical examiner for Duval County.

Dr. John M. Schultz, Miami, has been inducted into fellowship in the American Academy of Obstetrics and Gynecology.

Dr. Robert J. Boucek, Miami, was appointed associate professor of medicine in cardiology at the University of Miami School of Medicine. Dr. Boucek will also be the director of the department of cardiology.

Dr. Elwyn Evans, Orlando, has been named chairman in Florida of the T. Duckett Jones Memorial Fund, and Dr. Jean J. Perdue, Miami Beach, has been appointed to the Fund's national committee. The memorial is in honor of the late Dr. Jones, a famed authority on rheumatic fever and rheumatic heart disease.

Dr. Frank A. Massari, Tampa, has been named an Associate in the American College of Physicians.

The Lions Club of Graceville has selected Dr. Redden L. Miller as "Man of the Year." Dr. Miller has practiced medicine in Holmes County for 54 years.

Drs. Ralph W. Jack, Miami, H. Quillian Jones, Fort Myers, and George W. Morse, Pensacola, have been appointed to the Medical Advisory Board of the State Welfare Department.

The Bay County Medical Society has elected the following new officers: Dr. Joseph H. Morris, president, Dr. Sidney E. Daffin, vice-president, Dr. John J. Hollomon, Jr., secretary, and Dr. James A. Poyner, treasurer. All the officers are from Panama City.

Dr. Thomas F. Huey, Jr., Fort Lauderdale, has been elected president of the Broward County Medical As-

Continued on page 431

BOOK REVIEWS

Roentgen Interpretation

By George W. Holmes, M.D., Clinical Professor of Roentgenology, Emeritus, Harvard Medical School, and Laurence L. Robbins, M.D., Radiologist-in-chief to the Massachusetts General Hospital and Associate Clinical Professor of Radiology, Harvard Medical School. Eighth Edition. 525 pages. 371 illustrations. Philadelphia: Lea and Febiger, 1955. Price $10.00.

This is a revised edition of a firmly established text of radiologic diagnosis. The authors have condensed a vast subject into a concise text which is brief, but surprisingly comprehensive. The book is primarily a text for medical students, but it is a valuable reference for any physician. The bibliographies are complete and more detailed information can be readily obtained. The subject matter is well organized and covers the entire body, part by part. Practically all of the reproductions are in the negative (as seen on x-ray film). Most of the illustrations are of excellent quality; there are a few instances where better film selection could have been made. In many places, the text is very brief, the authors obviously intended comprehensive coverage in a condensed package. They have succeeded admirably in accomplishing this goal. The dramatic illustrations and fast reading will capture the interest and imagination of every student and physician.

Migraine and Periodic Headache

A Modern Approach to Successful Treatment. By Nevil Leyton, M.A., M.R.C.S., L.R.C.P., Second Edition (reprinted). 128 pages. Springfield, Illinois: Charles C. Thomas, Publisher, 1954. Price $2.50.

The monograph written by Nevil Leyton, honorary physician to the migraine clinic at the Putney Health Center, presents sections on etiology, diagnosis, prognosis, examination and treatment of the patient with migraine or periodic headaches.

In the preface, the author states, "unless an individual has either suffered himself, or has seen another in the throes of a severe bout, it is not easy to learn the depth of agony and intensity of suffering undergone by those unfortunate enough to be afflicted with this persistent, but nonlethal disease." In this statement the reviewer is in full accord.

The etiology of the disorder is well covered with emphasis laid by the author on his personal concept that endocrine factors exist due to pituitary-gonadal imbalance that give rise to a substance to which the individual is sensitive, and which causes a spasm and then dilatation of the cerebral arteries.

The differential diagnosis of the disorder is discussed in detail. Methods of examination, particularly the use of the histamine skin test are outlined.

Treatment is elaborated in particular detail, concerning the use of histamine and the use of oral prostigmin in the treatment of histamine sensitive individuals. The latter method is not commonly employed in this country. The method of desensitization to anterior pituitary-like substances is also given in detail. The use of these more-or-less specific agents is modified by a full discussion of the use of Carbachol, urea, Bellergal, and of course vitamin B_2 complex.

The last 65 pages of the 122 page monograph are devoted to illustrative case reports, emphasizing points in the diagnosis and treatment of periodic headache.

Although the monograph suffers from the emphasis placed on the author's favored methods of treatment, it is a concise and helpful book. Practitioners are apt to flee from the problem of periodic headache. With the aid of this monograph, they can face it with methods and assurance, and can draw their own critical conclusions as to the results obtained.

Pharmacopoea Internationalis

First Edition, Volume II. World Health Organization, Geneva, 1955. Printed also in French. 350 pages. Price: $6.75.

The publication of volume II of the International Pharmacopoeia successfully completes a task begun in 1937 under the auspices of the League of Nations Health Organization and carried on since 1947 by the World Health Organization, through the members of the Expert Advisory Panel on the International Pharmocopoeia and Pharmaceutical Preparations, and of other specialists.

This volume consists of 217 monographs, 26 appendices, and one annex. It contains, among others, specifications for some of the pharmaceutical preparations introduced into therapeutics during the last few years (e.g., penicillin, chloramphenicol, dihydrostreptomycin, oxytetracycline) and for some synthetic substances of growing importance. It also contains monographs on compressed tablets, sterile injections, and tinctures of substances included in volume I.

In the appendices are descriptions of the relevant methods of assay for some of the substances in the volume, and as in the first volume, a table giving the usual and maximal doses for adults of all the pharmaceutical preparations included. In addition, for certain drugs in both volumes there is a table of usual daily doses for children. Another appendix contains a list of the International Biological Standards and Reference Preparations at present available.

An annex on solutions of cardiolipin and lecithin has been added, in view of the increasing use of these substances in serological tests.

A detailed index to both volumes is included.

Childbirth: Theory and Practical Training

By Marjorie F. Chappell, D. N. (Lond.) 125 pages. Baltimore: Williams and Wilkins Co. Price $2.50.

This book is another of the many works prepared to teach women and their attendants how to naturally carry out the physiologic process of childbearing. This particular preparation is designed for those who are "faced with the formidable task of instructing a tense

generation in the art of relaxation." Much emphasis is placed on prenatal exercises, breathing technics, etc. It is the reviewer's opinion that the worth of this type of treatise lies in its effort to return the process of childbirth to the mother, and to take it away from the zealous obstetric operator. The most important feature in preparation for childbearing is a mature confidence on the part of a woman in her functions as a woman, and a profound desire on her part to have a child. If such an attitude is combined with a calm confidence in the obstetrician, profound narcosis of either the mother or child, or both, will never be necessary, whether or not the patient participates in an exercise program or learns the details of pelvic anatomy. As a matter of fact, tremendous caution must be exerted by any nurse, or maternal welfare instructor so as not to interject feelings of doubt and concern in the minds of the expectant woman. With certain individuals, it is virtually impossible to adequately explain physiologic and medical processes in a reassuring fashion. For a woman to know that she is doing well, that her pregnancy could not be more normal, that she may look forward to an enjoyable experience in not only owning, but in having her child, seems more worthwhile to this reviewer, than diaphragmatic breathing.

The Management of Obstetric Difficulties

By Paul Titus, Revised by J. Robert Willson, M.D., Professor of Obstetrics and Gynecology, Temple University School of Medicine. Fifth Edition. 716 pages. 348 illustrations and one color plate. St. Louis: The C. V. Mosby Company, 1955. Price $12.50.

The fifth edition of the Management of Obstetric Difficulties originally edited by the late Dr. Paul Titus and currently revised by Dr. J. Robert Willson, constitutes an outstanding present day review not only of obstetric difficulties, but also of rational management of the normal patient. The book is beautifully illustrated and well documented. The references are current, and the approach to obstetric abnormalities sound. As in any publication of a textbook type, standard and accepted methods of treatment are emphasized. Although variations in technic might appeal to some operators, the program of therapy in each instance outlined by Dr. Willson, is conservative and adequate. The details of neonatal infant care are worthy of special recognition. The most impressive feature of the entire book to the reviewer, is the complete exclusion of obstetric folklore, many elements of which, unfortunately, have been included in the text of otherwise authoritative works.

Having Your Baby

By Leonard H. Biskind, M.D., Chief, Division of Obstetrics and Gynecology, Mount Sinai Hosiptal, Cleveland, Ohio. Revised Edition. 164 pages. New York: Random House, Inc., 1954. Price $1.95.

As is quite apparent by the title, this book is published for the purpose of teaching the expectant mother what is happening to her during the process of embryonic and fetal life, the delivery of the child and the immediate postpartum period. This is one of many such books which have recently been published and bought and read by many prospective parents. It again mentions complications, and although obviously written for the purpose of reassurance, might easily fill many with concern. It is a virtual impossibility for a woman to read such a detailed description of what is happening to her, and to still assume that what is going on is a physiologic process. One wonders if emphasis on the possible dire results of insecticides in the home including the chemical names, serves as a reassuring influence. Another example, "bathing in indoor or outdoor pools, lakes or in the ocean is forbidden during pregnancy," seems not to represent to the apprehensive woman, that what she is going through is normal. Inasmuch as certain symptoms may tax even the expert diagnostician, a decision on the part of the patient herself, based on material gleaned from her lay interpretation of such a book of instructions, is near the impossible. The reviewer feels that women's questions may well be answered in this book, but there is doubt as to whether such written explanations are truly reassuring. There are no substitutes for a woman's confidence in herself, her desire for a child, and the calm reassurance of an approachable obstetrician.

Forceps Deliveries

By Edward H. Dennen, M.D., Professor of Obstetrics and Gynecology, New York Polyclinic Medical School and Hospital and Associate Professor of Clinical Obstetrics and Gynecology, Cornell Medical College. 228 pages. 91 illustrations. Philadelphia: F. A. Davis Company, 1955. Price $6.50.

This handbook devoted entirely to the use of the obstetric forceps is unique not only in its written content, but also in the clarity of the pen and ink illustrations. An objective approach to the various forceps maneuvers, is presented for the obvious effort to avoid undue emphasis on any single technic. Inasmuch as the obstetrics forceps is the commonest used surgical instrument with the exception of the artery clamp, it is remarkable that more such books have not been published in the past. This publication should be very useful not only to the practitioner of obstetrics, but also to medical students.

Anesthesia in Ophthalmology

By Walter S. Atkinson, M.D., Associate Clinical Professor of Ophthalmology, New York University Postgraduate Medical School. 101 pages. Springfield, Illinois: Charles C. Thomas, Publisher, 1955. Price $3.25.

This is an excellent brief monograph dealing exclusively with local and general anesthesia that concerns the ophthalmologist.

As a preanesthetic medication for local anesthesia in the adult, the author prefers a combination of pentobarbital sodium (Nembutal) or secobarbital sodium (Seconal), chloral hydrate, meperidine hydrochloride (Demoral), and phenergan hydrochloride or chlopromazine hydrochloride. He emphasizes a test dosage of these drugs the night before surgery to determine the tolerance and reactions of the patient. For topical anesthesia tetracaine (Pontocaine) is the drug of choice. For infiltrating anesthesia a 2 per cent solution of procaine (Novocaine) or lidocaine (Xylocaine) is preferred. The importance of adding

hyaluronidase to these preparations to lower the intra-ocular tension and to give greater diffusion is stressed.

The author presents his new method for block of the facial nerve along the inferior edge of the zygomatic bone. This is chosen as there is not the ballooning of the lids associated with the classic van Lint method or the difficulty of finding the nerve or the pain in the jaw as found with the O'Brien method. The retrobulbar injections within the muscle cone, subconjunctival injections, and regional block anesthesia are also discussed. The last two chapters are concerned with anesthetic emergencies and their treatment, and the advantages and disadvantages of different agents used for general anesthesia.

Introduction to Thermodynamics of Irreversible Processes

A Monograph in American Lectures in Biochemistry and Biophysics. By I. Prigogine, D.Sc., Professor, Faculty of Science, University of Brussels, Brussels, Belgium. Edited by W. Bladergroen, Ir. (Delft), M.A., Ph.D., Sandoz Ltd., Basle, Switzerland. Publication Number 185, American Lecture Series. 115 pages. Springfield, Illinois: Charles C. Thomas, Publisher, 1955. Price $4.75.

This book can hardly be recommended to the average student of biology and medicine. A complete understanding of the concepts developed by the author, requires a knowledge of rather advanced mathematical technics. However, the basic ideas of thermodynamics of irreversible processes are rather simple and are worthy of comment.

Classical thermodynamics deals with such concepts as "reversible processes," i.e., time independent states in which no net exchange of matter or energy occur between the system and its environment. This seriously limits the applicability of the classical theory. On the other hand, thermodynamics of "irreversible processes" attempts to overcome this serious limitation of the classical science by dealing with such problems as "steady states." Steady state phenomena can also be considered as time independent states; however, they differ from equilibria in that there occurs a steady flow of energy and matter through the system.

Obviously then, the majority of the phenomena studied in biology and medicine are examples of "irreversible processes" or "steady states."

Even though the ideas developed by the author are still in the initial stages, they will undoubtedly prove of value in the future.

The Role of Humoral Agents in Nervous Activity

By Bruno Minz, M.D., Research Professor, National Center of Scientific Research, Department of General Physiology, Sorbonne, Paris, France. 201 pages. Springfield, Illinois: Charles C. Thomas, 1955. Price $7.75.

A study of the physiology and pharmacology of the autonomic nervous system has contributed immensely to our understanding of the mechanism of action of drugs. In this field, Dr. Minz has made many outstanding contributions. It is very refreshing and stimulating to have a first hand account of the historical development of this important subject. The review is unbiased, authoritative and complete in every detail. The tables and figures supplement the text admirably and add considerably to the pleasure of reading the monograph. Unfortunately, there are a few technical errors, but they do not distract from the general theme of the book. The endeavor is highly recommended both to physicians and students.

Pathology for the Surgeon

By William Boyd, M.D., F.R.C.S., F.R.C.P. Seventh Edition. 737 pages, 547 illustrations including 10 in color. Philadelphia: W. B. Saunders Company, 1955. Price $12.50.

This is the seventh edition of a book on surgical pathology which has had wide use during the past 30 years. Its value to the surgeon is attested by this long period of publication and successive revisions. The author states his objectives in this volume, as a revision having in mind the graduate or postgraduate surgeon not the undergraduate nor the pathologist.

The first section deals with general subjects such as inflammation and repair, wound infections, granulomata, gangrene and the like. The major portion of the book is then given over to the special surgical pathology of the several anatomic areas or systems. As is to be expected, with the changing pattern of practice and experience, that less space needs to be given to some of the infectious and inflammatory processes and more to those of neoplastic origin. The pathology of vascular and pulmonary disease plays a larger part than formerly because of the advances in the surgical attack upon the cardiovascular and respiratory systems.

This book should be most valuable to the practicing surgeon and to the graduate who needs to review the subject of surgical pathology for Board examinations. The illustrations are satisfactory, and the bibliographic references are apparently chosen with care. A book of this kind should be in the library of the surgeon.

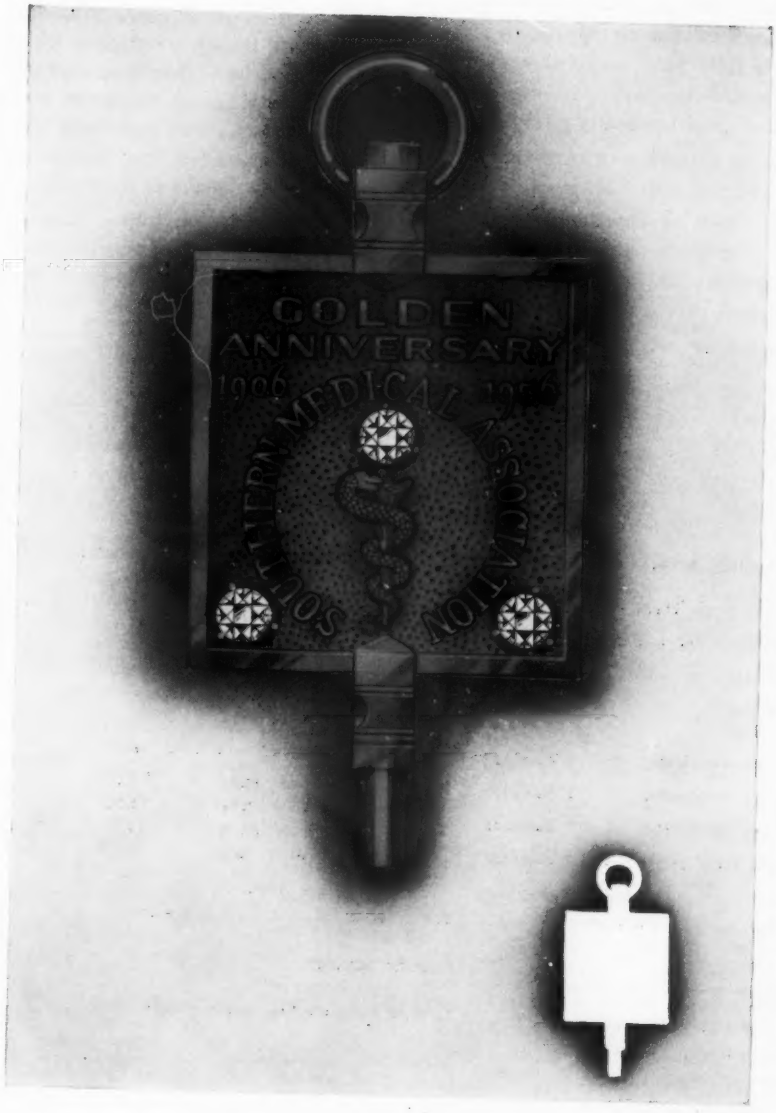
Clinical Disorders of Hydration and Acid-Base Equilibrium

By Louis G. Welt, M.D., Professor of Medicine, Department of Medicine, University of North Carolina. 262 pages. Boston: Little, Brown and Company, 1955. Price $6.00.

The first section of this book provides a lucid discussion of the fundamental aspects of acid-base equilibria and water balance; a second section is devoted to the application of this knowledge to clinical problems. In the latter discussion, the author has made good use of the illustrative case summaries to emphasize important points. The trend toward oversimplification which is apparent in this section is not disadvantageous; rather it permits a direct approach to the intelligent use of fundamental data in the management of disorders of salt and water metabolism.

The author has written in a clear, concise, readable style; simple diagrams are used to advantage and the bibliography is excellent.

This monograph deserves strong recommendation. It should be available to all those who are charged with the management of seriously ill patients.



(See opposite side for story and order form)

THE GOLDEN ANNIVERSARY KEY

This year—1956—is an important milestone for the Southern Medical Association. Your officers felt that an appropriate emblem of this fifty year story of service to Medicine should be fashioned—one that every member could proudly possess.

The idea of a Golden Anniversary Key (illustrated in full color on opposite side) is the brain child of Dr. Jack Norris, Atlanta, Councilor from Georgia. Dr. Norris submitted pencil sketches from which our artists designed this unique Key.

Every member of the Association is eligible to own one. In addition to a choice of gold content, the Key may be embellished with one or more diamonds according to the length of time a physician has been a member. One diamond is permitted for each completed decade of membership. New members, and members belonging to the Association for *less* than ten years may own the Key without diamonds.

The Association hopes that a large majority of the members will want a Key as a token of membership in an organization which proudly celebrates its Golden Anniversary.

ORDER FORM

Southern Medical Association, Room 1017, Empire Building, Birmingham, Alabama

Please accept my order (check enclosed) for a "Golden Anniversary Key" to be made up as follows:

1/10K double rolled gold plate	$ 5.00
10K solid gold	8.00
14K solid gold	11.00

Amount for Key $_____

10-20 years membership	1 diamond
20-30 years membership	2 diamonds
30-40 years membership	3 diamonds
40 or more years membership	4 diamonds

Extra charges for diamonds (each)

1 point stone	$ 5.00
1.5 point stone	6.50
2 point stone	8.25
3 point stone	10.00

Please add _____ diamonds (_____ points) at $_____ each

Total for diamonds $_____

Total for complete Key (check enclosed) $_____

Signed: _____ M.D.

Address: _____

_____

Engraving: Physicians may have their own local jeweler engrave their name on back of Key. Form suggested:
John Doe, M.D.

NOTE: The Southern Medical Association will ship Key to the name and address above unless otherwise instructed—allow 90 days for delivery.
Prices include Federal and State Taxes.

SOUTHERN MEDICAL ASSOCIATION
Minutes of Forty-Ninth Annual Meeting
Houston, Texas, November 14-17, 1955

OPENING ASSEMBLY

Public Session

Monday, November 14, 10:30 a.m.

The Opening Assembly was held at the Shamrock Hotel, Emerald Room, Houston, Texas, Dr. Denton Kerr, General Chairman, Houston, presiding. Reverend Kyle Yates, Pastor, Second Baptist Church, Houston, gave the invocation.

Mr. John E. Stephen welcomed the Association on behalf of Honorable Roy Hofheinz, Mayor of the City of Houston.

Dr. James E. Pittman, President, Harris County Medical Society, Houston, delivered an address of welcome for the Society. Dr. J. Layton Cochran, President, Texas Medical Association, San Antonio, Texas, delivered an address of welcome for the Association. Dr. Milford O. Rouse, Chairman of the Council, Southern Medical Association, Dallas, Texas, responded to the addresses of welcome.

A number of prominent business and professional people who were seated at the speakers' table were introduced by Dr. Denton Kerr.

An Award of Merit from the American Medical Education Foundation to the Southern Medical Association was presented by Dr. George F. Lull, Vice-President of the Foundation and Secretary and General Manager, American Medical Association, Chicago, Illinois.

Dr. R. L. Sanders, President, Southern Medical Association, Memphis, Tennessee, gave his President's Address entitled "Values in Medicine." Dr. Sanders presided over the remainder of the session.

Dr. Francis P. Gaines, President, Washington and Lee University, Lexington, Virginia, gave an address, "The Range of Loyalty."

Proposed amendments to the Constitution offered at the St. Louis meeting last year and proposed amendments to the By-Laws approved by the Council on Saturday preceding this meeting were presented by Dr. Milford O. Rouse and were laid on the table for final action at the General Session on Wednesday. These amendments were posted on the bulletin board in this meeting room.

The meeting adjourned at 11:45 a.m.

SECOND GENERAL SESSION

Wednesday, November 16, 7:00 p.m.

A General Session was held at the Shamrock Hotel, Emerald Room, Houston, Texas, Dr. R. L. Sanders, President, Memphis, Tennessee, presiding. Reverend Dawson Bryan, Director, Institute of Religion, Texas Medical Center, Houston, gave the invocation.

The President, Dr. Sanders, called upon Dr. Milford O. Rouse, Chairman of the Council, to report for the Council. It was moved, duly seconded and carried without a dissenting vote that since the Report of the Council will be printed in full in the *Southern Medical Journal* that it be approved as prepared by the Chairman. The proposed amendments to the Constitution and By-Laws as presented at the Opening Assembly on Monday were a part of this Report and were posted on the bulletin board in the meeting room. (See report of the Council for details of amendments.) The approval of the Report of the Council carries with it the adoption of the proposed amendments.

The President, Dr. Sanders, called upon Dr. Rouse, Chairman of the Council, as Chairman of the Nominating Committee, to present the Report of the Committee who gave the following report:

"The Council, as your Nominating Committee, presents for your consideration the following:

For President-Elect: Dr. J. P. Culpepper, Jr., Hattiesburg, Mississippi.

For First Vice-President: Dr. W. Kelly West, Oklahoma City, Oklahoma.

For Second Vice-President: Dr. Denton Kerr, Houston, Texas."

Motion was made, duly seconded and carried without a dissenting vote that the Report of the Nominating Committee be accepted and the nominees be elected by acclamation. The President, Dr. Sanders, then presented the newly elected officers.

Dr. W. Raymond McKenzie, Baltimore, Maryland, was then duly installed President of the Southern Medical Association, effective at the close of the annual meeting.

Dr. Milford O. Rouse made a special presentation of an Anniversary Key to Mr. C. P. Loranz in recognition of his 43 years of distinguished service to the Association.

Dr. Milford O. Rouse, Chairman of the Council, presented the Past President's Medal to Dr. R. L. Sanders, retiring President.

After announcements this General Session adjourned, and with the completion of the program on Thursday, the 1955 annual session of the Association adjourned.

The General Session was preceded by a dinner attended by 620 physicians, ladies and guests. Following the General Session was professional entertainment and a dance.

REPORT OF COUNCIL

By Dr. Milford O. Rouse, *Chairman*

The Council of the Southern Medical Association met at Houston, Texas, Shamrock Hotel, Saturday, November 12, 1955, 9:00 a.m. Present: Dr. Milford O. Rouse, Chairman, Dallas, Texas; Dr. J. Morris Reese, Vice-Chairman, Baltimore, Maryland; Dr. Lee F. Turlington, Birmingham, Alabama; Dr. Fount Richardson, Fayetteville, Arkansas; Dr. Harry Lee Claud, Washington, D. C.; Dr. C. A. Andrews, Tampa, Florida; Dr. Jack C. Norris, Atlanta, Georgia; Dr. A. Clayton McCarty, Louisville, Kentucky; Dr. J. Kelly Stone, New Orleans, Louisiana; Dr. J. F. Lucas, Greenwood, Mississippi; Dr. Grayson Carroll, St. Louis, Missouri; Dr. H. L. Brockmann, High Point, North Carolina; Dr. Henry H. Turner, Oklahoma City, Oklahoma; Dr. Charles R. Thomas, Chattanooga, Tennessee; Dr. Waverly R. Payne, Newport News, Virginia; and Dr. V. Eugene Holcombe, Charleston, West Virginia; and Dr. J. W. Jervey, Jr., Greenville, South Carolina, sitting for Dr. W. Thomas Brockman, by appointment of the President. Sitting with the Council: Dr. R. L. Sanders, President, Memphis, Tennessee; Dr. W. Raymond McKenzie, President-Elect, Baltimore, Maryland; Dr. J. P. Culpepper, Jr., First Vice-President, Hattiesburg, Mississippi; Dr. Robert D. Moreton, Councilor-Elect from Texas, Fort Worth; Dr. Donald S. Daniel, Councilor-Elect from Virginia, Richmond; Mr. C. P. Loranz, Advisor and Professional Relations Counselor, Birmingham, Alabama; Mr. V. O. Foster, Executive Secretary-Treasurer and Managing Editor, Birmingham, Alabama; Mr. Robert F. Butts, Business Manager, Birmingham, Alabama; and Dr. R. H. Kampmeier, Editor, Nashville, Tennessee.

The meeting was called to order by the Chairman, Dr. Milford O. Rouse, Dallas, Texas, who presided.

The President, Dr. R. L. Sanders, presented the regrets of Dr. W. Thomas Brockman, member of the Council from South Carolina, at not being able to attend the Houston meeting due to illness. Dr. Sanders appointed Dr. J. W. Jervey, Jr., Greenville, to represent South Carolina at this meeting.

Dr. Rouse introduced the Councilors-Elect: Dr. J. W. Jervey, Jr., Greenville, South Carolina; Dr. Robert D. Moreton, Fort Worth, Texas; and Dr. Donald S. Daniel, Richmond, Virginia. (Dr. Joseph S. Stewart, Miami, Florida, was unable to attend due to illness.) These physicians became regular members of the Council at the close of the Houston meeting.

MINUTES

The minutes of the previous sessions of the Council at the 1954 meeting in St. Louis were approved as published in the Journal (Vol. 48, No. 4, April, 1955, pages 407-444).

REPORTS OF OFFICERS

The following reports of officers were made and accepted. (Certain recommendations were subsequently acted upon by the Council.)

REPORT OF THE EXECUTIVE SECRETARY-TREASURER

TO: The Council and Executive Committee
of the Southern Medical Association

The past year has been another good year in the history of the Southern Medical Association. Progress and indications

of future progress are evident in every major phase of the Association's activities.

MEMBERSHIP

Membership reached 9,411 on September 30, 1955—an all-time high. The greatest gain occurred during the last six months of the year and *after* approximately five hundred were removed from the roster for non-payment of dues on April 1. The most heartening fact is that 877 *new* members have been enrolled this year. Processing of membership dues continues at an unprecedented rate.

Major factors in the increase in new members are (1) the work of Mr. Loranz and the State Promotion Committees, (2) the Bulletin, (3) a revitalized insurance program, (4) and more personal solicitation by members.

Twenty thousand copies of the little "Invitation to Belong" have been strategically distributed and are now producing a steady stream of new members.

Other factors resulting in more members have been the work of the Woman's Auxiliary, the appeal of the JOURNAL, and indirectly, the broad representation of the Association at state, regional and national medical meetings. A breakdown of membership by states is attached hereto.

FINANCE AND BUDGETARY CONTROL

The attached reports reflect, in the opinion of your Executive Secretary, a sound financial condition. Revenue for the past budget year was 112% of estimate, while expenditures were 98.3% of estimate. As a result, the cash position of the Association at the end of the year was $45,000.00 above estimate.

Major factors in this favorable situation have been: (1) a substantial increase in JOURNAL advertising, (2) increases in dues, (3) increases in exhibit revenue, and (4) a decrease in certain operating expenses in the Administrative Department.

Budgetary procedure provides an excellent "blueprint" for sound financial management. The proposed budget for this fiscal year (October, 1955-September 30, 1956) has had your tentative approval by correspondence. It should be formally adopted at this meeting. This budget predicts an even more favorable financial position at the close of next year.

NEW APPROACHES

While the basic and proven pattern of administration of the affairs of the Association has remained the same, several new approaches have been made during the past year. There is substantial evidence that they have been sound and effective. Among them are: (1) the new JOURNAL format and an increase in the variety and quantity of pages—both editorial and advertising. (2) the News Letter. Since December 1, nine News Letters have carried pertinent and brief news of the Association's activities, projects, and plans to a selected mailing list. Some two hundred persons receive the News Letter including the General Officers, Councilors, Councilors-Elect, Trustees, Past Presidents, and Section Officers. (3) A timetable of program planning for this meeting, including detailed instructions to Section Officers and follow-up of all program participants. (4) Departmentalization of the headquarters office.

Major office procedures are now carried out by operating departments for Membership, Accounting, JOURNAL Publication, Professional Relations, Business Management and General Administration. Department heads have the necessary authority to assume responsibility for departmental results including supervision of employees.

The above outline, of course, is skeletal. It is the framework, however, of a total program into which many people have poured a lot of enthusiasm, effort, and support. The leadership of the Officers, the policy decisions of the Executive Committee and the Council, the energy and versatility of the Editor, the superb cooperation of the Section Officers—all have added up to "another good year."

On behalf of your entire headquarters staff, I want to thank every one of you for your unselfish contributions of hard work, enthusiasm, and at *all* times, tolerance. You have contributed immeasurably to the success—the *esprit de corps* —of a fine organization.

Respectfully submitted,
V. O. FOSTER, *Executive Secretary-Treasurer*

REPORT OF THE BUSINESS MANAGER

As you have no doubt already noted from the report of the Executive Secretary-Treasurer, the fiscal year just ended has been a very good year for the Southern Medical Association. Continued progress is anticipated.

JOURNAL

Although production and material costs increased considerably during the past year, the JOURNAL showed an even greater profit for the year's operation than anticipated. The increases in the costs of production were far greater than is reflected in the financial statement, but by making additional savings and utilizing new technics of production, it was possible to reduce over-all production costs, and thereby offset some of the increases. Additional savings will be realized during the coming year through purchasing paper in cooperation with other publications, thereby receiving a lower price on paper used.

JOURNAL advertising has increased beyond our anticipation. Since the end of the fiscal year 1955, we have published two issues of the JOURNAL, each carrying a greater number of advertisements and being larger than any JOURNAL previously published. We can reasonably expect to match and even surpass in the future the quantity of advertising carried during the past fiscal year.

EXHIBITS

All exhibit space for the Houston meeting was sold on the first offering, fully nine months before the dates of the meeting. Unfortunately, due to extremely limited amount of space available for exhibits in Houston, it was necessary to turn down approximately as many exhibits as we were able to accept. Policy governing exhibits is responsible in a large part for the popularity of the technical exhibits at Southern Medical Association meetings. This policy tends to promote a more scientific type of technical exhibit, thus increasing the value of the meeting to both the attending physician and the exhibitor.

As a result of the breakfast held in Atlantic City which was attended by many Officers and Councillors of the Association and representatives of the Medical Exhibitors Association, a spirit of cooperation between the Association and technical exhibitors now exists which is not found elsewhere.

FUTURE MEETINGS

WASHINGTON 1956

Two trips have been made to Washington to make preparations for the Golden Anniversary Meeting of the Association. After looking over all facilities available in Washington, the consensus is that the facilities offered by the Sheraton-Park Hotel are best suited to the needs of the Association. It will be possible to have all scientific aspects of the meeting and all exhibits located in the Sheraton-Park Hotel. It is anticipated that sufficient space will be available to accommodate all firms wishing to exhibit at this meeting.

MIAMI 1957

On a recent trip to Miami and Miami Beach, all available facilities were inspected. After looking over facilities, your Executive Secretary-Treasurer and Business Manager had a meeting with Dr. L. W. Dowlen, President of the Dade County Medical Association, Dr. H. B. Rogers, President-Elect of the Dade County Medical Association, Dr. R. F. Dickey, Secretary of the Dade County Medical Association and Mr. John Lee, Executive Secretary of the Dade County Medical Association for the purpose of determining the attitude of the Dade County Medical Association to holding the 1957 meeting in Miami Beach rather than Miami, as it seems the facilities at Miami Beach are better adapted to the needs of the Association. The consensus of the group is, as Miami Beach could, in the municipal auditorium, house all scientific aspects of the meeting, including all the section meetings and exhibits under one roof, and house all physicians attending the meeting in hotels located within four blocks of the auditorium, that the Association should hold its 1957 meeting utilizing the facilities available on Miami Beach rather than the facilities available at Dinner Key in Miami. Dinner Key is located approximately five miles from the Miami hotels and does not have the required number of meeting rooms. It is requested that the Council decide here the physical site of the 1957 meeting.

NEW ORLEANS 1958

Dr. J. Kelly Stone, Councilor from New Orleans, has or will present an invitation for the Association to hold its 1958 meeting in New Orleans. A guarantee of 2000 first class hotel rooms and assurance that the municipal auditorium will be available should the Council accept the invitation presented by Dr. Stone has been received. Necessary exhibit space and meeting rooms can be provided in the municipal auditorium to accommodate the meeting. While New Orleans will be the most popular meeting site that can be selected, the guarantee of a minimum of 2000 first class hotel rooms will be sufficient to present probably the largest attended meeting in the hitsory of the Association.

* * *

I wish to take this opportunity to express my thanks to the General Officers, Executive Committee, Council and the headquarters staff for the cooperation, aid and understanding rendered me at all times.

Respectfully submitted,
ROBERT F. BUTTS, *Business Manager*

REPORT OF THE EDITOR

We have now had one year's experience in publication of the JOURNAL. It has been a year of becoming acquainted with the problems attendant upon its publication, a year of learn-

ing much about the source of scientific material for the JOURNAL, and something about the Section Meetings, essays and discussions.

The beginning was rather hectic. For the January issue we had on hand a half dozen papers in galley. Needless to say, since it takes about 60 to 90 days to process a paper from editing to publication, we hope never to experience another ninety days such as the first three months of 1955. We knowingly laid ourselves open to criticism in those early months by publishing discussions without galley being approved by the discusser. But this choice was made in preference to great delay in publication of the JOURNAL.

MAKE-UP OF THE JOURNAL

The physical changes in the JOURNAL,—the cover, format and typography were presented to you for approval last year. These have brought the JOURNAL in step with the changes which have occurred in publishing in general. The changing pattern is the result of studies of readers, reading habits and the mechanics of reading.

EDITORIAL WORK

As of November 1, 238 papers have been edited. Of these 191 had been presented at Section Meetings, 47 were contributed. Nineteen contributed papers have been refused publication because of unsuitability. Two papers which were presented before Sections were not published, one of which was clearly unethical. Twenty-four editorials have been written by the Editor. Through the help of the Assistant Librarian in the Vanderbilt Medical School Library the index of the 1955 volume will be modernized for ease in reference work.

The Editorial Board has been of great help. All but one have contributed one editorial during the year, thereby offering variety in interests on the editorial page. Several have been of great assistance in passing upon the content of contributed papers. Doctors Rieser, Rienhoff and Brown have had the main burden of this because of the greater number of papers contributed in genito-urinary surgery, general surgery and in obstetrics and gynecology.

With your approval Mr. Foster has asked the editor to pass on the acceptability of the scientific exhibits offered for this Session. In certain instances the members of the Editorial Board have been of help in a more critical review of the application.

PROBLEMS OF THE FUTURE

Mr. Foster has indicated that the JOURNAL has had 100 more pages of text than in the preceding year. This is good. But our greatest concern is to improve the content of the JOURNAL. This is a slow process. I hope that attempts to improve the Section Meetings will bear fruit in better papers for publication. This will require several years as we predicted a year ago. But we believe this represents our most important problem. The Southern Medical Association must live on new members to replace the veteran members. Our major offering is postgraduate education. I find the graduates of the last fifteen years very critical in their evaluation of postgraduate courses, journals and medical meetings. We must face the fact that we are in a highly competitive field.

Several problems of policy face us, and we would like your advice before meeting with the Editorial Board.

1. Should the Editorial Board be enlarged to include a representative of all Sections? Several inquiries have been made concerning this.

2. It has been the custom to publish practically all papers presented at the Section Meetings. Would it be contrary to policy of the Association if the Editorial Board rejected certain papers?

3. Even though the Editor has used his red pencil often in wide debridement upon the discussions of papers, the question still is unanswered as to their value. In the first ten issues of 1955, approximately 99 pages have been devoted to discussion. Could these pages be used more profitably in contributed material? Serious thought should be entertained relative to possibly one or two prepared discussions for publication and elimination of published extemporaneous discussion.

These three problems of policy are posed for thought and discussion in anticipation of bringing them up for further discussion at the meeting of Section Officers and Editorial Board.

I must acknowledge the great help given me as a new editor of the JOURNAL by Mr. Foster, Mr. Butts, Mrs. Beasley and my secretary, Mrs. Hall.

Respectfully submitted,
R. H. KAMPMEIER, M.D., *Editor*

REPORT OF THE ADVISOR AND PROFESSIONAL RELATIONS COUNSELOR

It will be recalled by all of you that my position as the Executive Officer of the Association—Secretary, Treasurer and General Manager, carrying the title of Secretary-Manager, a position I had the privilege of holding for so many years—terminated as of November 30, 1954, and on December 1, 1954, I assumed the duties of Advisor and Professional Relations Counselor, a position you created with the feeling that my services were still needed and that I could still be of service to the Association.

I have now completed eleven months of the first year of that three-year tour of duty that you gave me. During these months I have tried, as in all of the years in the past, to render an effective service to the Association and to organized medicine in the South. In all of those years, and that has been true these past eleven months, I tried to live honestly with my own conscience.

I have been available at all times for consultation in any matters pertaining to the Association and have willingly and gladly given to any who have been interested in the benefits of any observations or experiences that I may have had over the years of my previous active service. I have tried to make it clear to all officers and members of the Association with whom it has been my privilege to have any contact that it was my sincere desire to be of effective service. The relations between me and my office and the central office, Mr. V. O. Foster, Executive Secretary-Treasurer, and Mr. Robert F. Butts, Business Manager, and their operating personnel, has been most cordial. I greatly appreciate the fine cooperation that has been given me at all times by Mr. Foster and Mr. Butts and those working with them.

When I left the central office there was not space on the tenth floor for an office for me, so I went up on the thirteenth floor with a suite of two small offices, one for me and one for my secretary. We have been very nicely fixed for work.

Since the St. Louis meeting was held while I was still the Executive Officer, and that meeting was my responsibility, the record of that meeting, the minutes as they appeared in the SOUTHERN MEDICAL JOURNAL for April 1955, was prepared in my office and under my personal direction. The minutes of meetings of the Executive Committee and the Council were reviewed, edited and approved over the signature of the Chairman, Dr. Olin S. Cofer. So the record of the St. Louis meeting in its entirety was handled in my office. That required a great deal of time.

It will be recalled that it was suggested that I could be of help in working with the members of the Council in the formation of and activity of the Councilor Promotion Committee provided for at the St. Louis meeting. It has been my pleasure to work closely with all of you members of the Council in setting up your Promotion Committees. Within a few months after the St. Louis meeting we had been able to have all Promotion Committees completed. There has been much correspondence in this activity. We have gotten out through my office a large number of letters for members of the various state committees.

I have kept you members of the Council acquainted with most of my activities by reports to you from time to time of meetings that I had attended and activities for which I had been responsible. In reviewing my activities I find that in these last eleven months I have attended and participated in twenty-two meetings, some large, some small, but all of them were meetings I thought it was to the interest of the Association for me to attend.

I told you, and many of you may remember, at the St. Louis meeting when I again expressed my willingness to continue to be of service, that it would be my purpose, as it always had been, to spend Association funds wisely, to try at all times to get a dollar in value for a dollar spent. Perhaps that was not always the case, and may not have always been the case this past eleven months, but everything that I have done was, I honestly thought, to the best interest of the Association and to promote good and better professional relations.

At the St. Louis meeting there were two actions by you having to do with funds for my use. In the report of the Policy Committee there is a recommendation you approved which reads: "The Committee recommends that Mr. Loranz be given adequate funds to carry out the duties of his office." And then, at a meeting of the Council there is this action: "It was moved and carried that Mr. Loranz's travel expense for the coming year be $12,000.00." I have very carefully recapped my total spending for this eleven months and I find the total is $9,802.00 which you will see is less than the over-all which could be made available. Here is the recap of my spending: Furniture and fixtures for office $499.95; Office rent $396.00; Salary of secretary $3,270.00; Office telephone $171.60; Telegrams and long distance telephone $129.90; Office postage $432.50; Stationery and printing $144.90; Office supplies and expenses $351.10; General expense $94.07; Travel expense attending those twenty-two meetings $3,368.18; and Official dinners and luncheons $945.80; total, $9,802.00.

In closing I wish you to know that it has been a great privilege to serve the Association this year as Advisor and Professional Relations Counselor. I hope that you who made it possible for me to continue to serve will feel that you were wise in your action in offering me that opportunity. I hope I may continue to merit your confidence and well wishes. I pledge you my best as I continue to serve.

(Signed) C. P. LORANZ

REPORT OF EMPLOYEES PENSION TRUST COMMITTEE

It will be recalled that at the St. Louis meeting last year final arrangements were made for the Employees Pension Trust of the Southern Medical Association to be administered by the Trust Department of the First National Bank of Birmingham and to become effective November 30, 1954. Agreeable to the action last year the retirement instrument approved by the Association was properly signed by the Trust Department of the First National Bank and there was turned over to the Trust Department as per previous action of the Association U. S. Government Bonds, purchase price $125,000.00 with a value at the time of being turned over to the bank, $145,187.50, together with $12,000.00 in cash, these to the irrevocable trust, and $12,000.00 in cash as a retirement fund reserve to be used when necessary for such retirement purposes as may be approved, in cash a total of $24,000.00. This was consummated and became effective as of November 30, 1954.

According to the irrevocable trust instrument there was to be a Committee of three to be known as the Retirement Committee. At the St. Louis meeting the Council elected for this Committee Mr. C. P. Loranz (three years) Birmingham; Dr. Lee F. Turlington (two years) Birmingham; and Dr. Olin S. Cofer (one year) Atlanta. The Committee met as required by the trust instrument, all members being present, and elected Mr. C. P. Loranz, Chairman, and Dr. Lee F. Turlington, Secretary.

The Trust Department of the First National Bank submitted an over-all investment plan which was approved by the Committee.

It will be recalled that Dr. M. Y. Dabney, Editor, with thirty-three years of service, retired December 1, 1954; and Mrs. M. Y. Dabney, Assistant Editor, with twenty-five years of service, retired December 1, 1954. Agreeable to the will of the Council as approved by its Executive Committee the Retirement Committee instructed the Trust Department to pay to Dr. Dabney $89.10 per month from the retirement trust and $36.45 from the retirement pension reserve, a total of $125.55 per month; and to Mrs. Dabney $49.89 from the retirement trust and $20.78 from the retirement pension reserve, a total of $70.67, payments to begin as of December 1, 1954.

Mrs. S. C. Riggan, with thirty-three years of service, and Mrs. W. A. Thornhill, with thirty-two years of service, retired from Association employment April 1, 1955. Neither had reached the age of 65, but both indicated a desire that retirement payments begin as of April 1, 1955. The actuary chosen by the Committee indicated that Mrs. Riggan would be entitled to $60.44 per month and Mrs. Thornhill to $53.34 per month as of April 1, 1955. The Committee approved the report of the actuary and instructed the Trust Department of the First National Bank to pay Mrs. Riggan $60.44 per month and Mrs. Thornhill $53.34 per month, payments to begin as of April 1, 1955.

The Retirement Committee has had two meetings and the above represents all that has been done to date by the Committee.

(Signed) C. P. LORANZ, *Chairman*

Mrs. Louis K. Hundley, President of the Woman's Auxiliary, was a luncheon guest of the Council and gave a brief report of the activities of the Auxiliary.

REPORT OF THE EXECUTIVE COMMITTEE

R. L. SANDERS, M.D., *Chairman*

Dr. Sanders reported that the Executive Committee had held three meetings since the last session of the Council. The following reports were approved.

EXECUTIVE COMMITTEE

Post-Convention Session, St. Louis, November 12, 1954

A special called meeting of the Executive Committee was held at the Jefferson Hotel, St. Louis, Missouri, on Thursday morning, November 11, 1954, with the following present: Dr. R. L. Sanders, Memphis, Tennessee, President; Dr. Milford O. Rouse, Dallas, Texas, Chairman of the Council; Dr. J. Morris Reese, Baltimore, Maryland; and Dr. A. Clayton McCarty, Louisville, Kentucky; Members of the Executive Committee. Dr. W. Raymond McKenzie, Baltimore, Maryland, President-Elect; Dr. J. P. Culpepper, Jr., Hattiesburg, Mississippi, First Vice-President; Dr. R. H. Kampmeier, Nashville, Tennessee, Editor; Mr. V. O. Foster, Birmingham, Alabama, Executive Secretary; and Mr. Robert F. Butts, Birmingham, Alabama, Business Manager. Dr. Sanders, Chairman of the Committee, presided.

The time for the annual meeting not only for 1955 but for future years was discussed generally and it was pointed out that there are conflicts during fall months. The Chairman suggested that perhaps late September would be a desirable time for the meeting particularly since the American Medical Association Interim session is now held in early December. He felt that the greater amount of time that could be secured between our meeting and the interim meeting of the American Medical Association would be desirable. Dr. Kampmeier pointed out that most medical schools are opening in the last week of September and suggested perhaps the first week in October as being most desirable.

It was felt by some members of the Committee that we should devise a name or slogan for the Washington meeting in 1956, and the terms "Golden Anniversary" and "Golden Jubilee" were suggested. No decision was made.

Dr. McKenzie suggested that the Executive Committee and the Council hold a meeting in Chattanooga, the birthplace of the Association, on Friday and Saturday preceding the meeting of the Association in Washington in 1956.

Dr. Kampmeier discussed changes in the format of the JOURNAL which would become effective with the January issue stating that these immediate changes were being made to improve the appearance and readability of the JOURNAL. He stated that long-range planning is underway—designed to secure better scientific material for the JOURNAL and thus elevate it from a scientific point of view. He stated that he was evaluating the possibility of securing review articles on current questions and that perhaps a President's Page might be used occasionally for special messages to the membership. Technical aspects of the new format were discussed with samples examined by the Committee and upon motion by Dr. Rouse, seconded by Dr. McCarty the proposed changes and improvements in the JOURNAL were approved.

Dr. McKenzie moved that identification badges or ribbons be prepared for all past presidents and the present officers of the Association for use at the Houston and subsequent meetings.

It was duly moved, seconded, and carried that the President appoint a committee to visit the technical and scientific exhibits, officially representing the Association.

A discussion with reference to methods of increasing interest and attendance at the scientific and technical exhibits resulted in a suggestion that we have thirty-minute intermissions in all sections, both morning and afternoon, and that the intermissions for this purpose be staggered throughout the sections, some sections intermitting at 10:00, others at 10:30, and still others at 11:00, and similarly staggered in afternoons. The above plan was adopted by motion, duly made and seconded and the Executive Secretary was instructed to inform the section officers of this plan.

Dr. Kampmeier stated that he had made three or four informal visits through the Exhibit Hall and found many of the exhibits poorly manned and many without attendants. He felt that more pressure should be exerted to have the booths properly attended and suggested that staggered intermission periods will make it all the more necessary for attendants to be at their booths at all times.

The matter of planning the Houston meeting was discussed generally and upon motion duly made, seconded and carried, this item is to be placed on the agenda of the meeting of the Executive Committee which will be called for Birmingham the latter part of January.

Following a discussion of other items to appear on the agenda for the interim meeting of the Executive Committee, the meeting was adjourned.

(Signed) R. L. SANDERS, M.D., *Chairman*
V. O. FOSTER, *Executive Secretary*

EXECUTIVE COMMITTEE

Interim Session, Birmingham, January 29, 1955

The Executive Committee of the Council met in the Iron Room, Tutwiler Hotel, Saturday morning, January 29, at 9:30 a.m. Those present were Dr. R. L. Sanders, President and Chairman of the Committee, Memphis, Tennessee, presiding; Dr. W. Raymond McKenzie, President-Elect, Baltimore, Maryland; Dr. J. P. Culpepper, Jr., First Vice-President, Hattiesburg, Mississippi; Dr. Milford O. Rouse, Chairman of Council, Dallas, Texas; Dr. J. Morris Reese, Vice-Chairman, Baltimore, Maryland; and Dr. A. Clayton McCarty, Louisville, Kentucky. Sitting with the Committee were Dr. R. H. Kampmeier, Editor, Nashville, Tennessee; Mr. V. O. Foster, Executive Secretary-Treasurer; Mr. Robert F. Butts, Business Manager; and Mr. C. P. Loranz, Advisor and Professional Relations Counselor—all of Birmingham, Alabama.

The meeting was called to order by the Chairman, Dr. R. L. Sanders. Mr. Loranz gave a resume of the minutes, and brought to the attention of the Committee two items which had been referred. The first, the Dabney retirement, was approved as proposed. (Exhibit A). The second, publication of memorials in the JOURNAL was thought to be a bad precedent by Dr. R. H. Kampmeier, Editor. Dr. Rouse moved that memorials be attached to the record, but not printed. Motion carried.

Mr. V. O. Foster, Treasurer, read his financial report which was approved.

Mr. Robert F. Butts gave a report on the physical facilities in Houston for the 49th Annual Meeting. November 14-17, 1955, was given as the best date for the meeting due to availability of The Shamrock for the exhibits (estimated to be around 90 for the average meeting), accommodations for

the sections and doctors, convenience to the Texas Medical Center and the city itself where other hotels would have rooms available for the doctors. The Shamrock is located six miles from the downtown area, which posed the problem of shuttle-bus service for those staying in town. This was approved by the Committee as a good solution. Charter service will cost $14.00 per bus per round trip.

The Committee was asked to vote upon the advisability of setting November 14-17, 1955, as the official meeting time for the Association. It was moved, seconded and carried that these would be the official dates.

Mr. Charles O. Finley, Administrator for the Group Insurance Program, discussed the program at length. He reviewed the basic benefits of the plan and stated that after another year or so of experience, the extension of benefits would be considered. He outlined plans for stepping up promotion and the cooperation of the headquarters office was assured. Dr. Clayton McCarty suggested the appointment of a committee on insurance to work with the Administrator and the Executive Secretary. It was moved by Dr. Rouse and duly seconded and carried that the Chairman appoint such a committee from the Council. (The proposal was submitted to the Council and approved.) The Chairman subsequently appointed the following members of the Insurance Liaison Committee: Dr. Grayson Carroll, Chairman, St. Louis, Missouri; Dr. A. Clayton McCarty, Louisville, Kentucky; and Dr. Fount Richardson, Fayetteville, Arkansas.

The report on the conference with the Local Committee on Arrangements in Houston was given by Mr. Foster. The Committee is composed of: Dr. Denton Kerr, Chairman; Dr. Donald M. Gready; Dr. Ralph Bowen; Dr. John R. Kelsey, Jr.; and Dr. Russell Bonham. It is their duty to appoint various sub-committees to handle the details of the meeting.

The general plan for the meeting was then discussed. The General Assembly was approved for Monday, November 14, at 10:30 a.m. The exhibit hall will not open until noon so as to not interfere with the Assembly.

The matter of having the annual dinner was discussed by the Committee. Dr. Culpepper moved that it be continued as in years past. The motion was duly seconded and carried. The annual dinner will be on Wednesday night, November 16, with President Sanders responsible for major planning.

Scientific exhibits were discussed. It was decided that applications should be mailed to the deans of the medical schools, members of the Editorial Board, and all others who might be interested in having an exhibit. The Editorial Board will act as a screening committee for all exhibits. Exhibits accepted by the A.M.A. would be acceptable since they are very carefully screened. New scientific exhibit blanks will be printed and more detailed in requirements.

The meeting was adjourned for lunch and reconvened at 2:00 p.m. Dr. Rouse made a report on the Sections' desires as to number, types, joint sessions, and length of sessions. A proposed schedule for the Section meetings during the meeting was presented by Mr. Foster. The schedule, with certain changes suggested by Dr. Rouse, was adopted.

Dr. Rouse moved that the Executive Committee be instructed to inform Section Officers that a maximum of nine sessions can be held in any morning or afternoon. The motion was duly seconded and carried.

Mr. Butts was called upon to report on the technical exhibits for the meeting. Dr. Sanders proposed that copies of rules and regulations be sent to every Councilor.

Entertainment provided at the meeting was discussed. It was moved and seconded that all Section Officers be notified that cocktail parties are not sponsored by the Association. Also, luncheons by the Sections instead of dinners will be stressed in order to avoid conflicts with the evening schedules.

The program of the Pediatric Section was discussed and a letter from Dr. William G. Crook, Secretary, was read. The letter carried Dr. Crook's resignation as Secretary. It was moved that the Chairman be authorized to appoint a full list of officers for the Pediatric Section and prepare a program for at least one session. The motion was duly seconded and carried. (Dr. Sanders subsequently appointed Dr. Harvey Garrison, Jackson, Mississippi, Chairman; Dr. Carroll M. Pounders, Oklahoma City, Oklahoma, Vice-Chairman; and Dr. David Greer, Houston, Texas, Secretary.)

Promotional methods and publicity were next discussed by the Committee. Dr. Reese moved that Mr. Foster be authorized to direct the promotional methods discussed with Mrs. Nancy Palm during the Houston conference with the Local Committee on Arrangements. Mr. Foster will take responsibility for mailing of news releases and letters from Councilors and Section Officers.

Membership promotion and methods were discussed. The Executive Committee recommends that upon request from the headquarters office, a member of the State Promotional Committee shall certify in writing that an applicant for membership qualifies under Article 3, Section 1 of the Constitution and By-Laws of the Association.

The matter of life memberships for members was deferred. Dr. Rouse moved that we suggest to the Council that the Association is not yet ready to actively consider any plan of life memberships. This was duly seconded and carried.

The Executive Committee gave Mr. Foster full authority with respect to conferring honorary memberships on qualified and worthy members.

The matter of an Anniversary Key for the 1956 Meeting in Washington, D. C., in commemoration of the Golden Anniversary of the Association was discussed. It was moved by Dr. Rouse that the proposal be brought before the full Council during the November meeting. The motion was duly seconded and carried.

The first meeting of the Executive Committee will be Friday, November 11, 1955, at 2:00 p.m.,—the place of meeting to be determined later.

The Council will meet on Saturday, November 12, 8:30 a.m., at breakfast. The joint dinner of the Section Officers and Council is Monday evening, November 14, 7:00 p.m.

The adoption of the official seal for the Association as used on the official stationery and Bulletin was the next item on the agenda. It was moved, seconded and carried that this seal be officially adopted.

The motion by Dr. Rouse that we authorize the headquarters office to consider offering certain of its old JOURNALS to the University of Alabama Medical School Library was brought before the Committee. An indefinite loan of these JOURNALS was proposed, retaining certain state journals and specialty copies valuable for reference purposes. The Library of the Medical College has agreed to move the volumes without cost to the Association, index them, give proper credit to the Southern Medical Association for their loan, and to always make them available to the Association's staff and members. The motion was seconded and duly carried.

It was moved by Dr. Reese that if, after due consideration by Dr. Kampmeier and Mr. Foster, microfilming the JOURNAL is feasible that Mr. Foster be authorized to execute the contract. The motion was seconded and carried.

The proposal of the Medical Society of the District of Columbia to cancel their meeting in favor of the Southern Medical Meeting in Washington, D. C., in 1956 was discussed by the Committee. Dr. McKenzie moved that we notify the D. C. Society that we accept their proposal. Dr. Culpepper suggested that we express our appreciation. The motion was seconded and carried by the Executive Committee. It was recommended that the first day of the meeting be designated as "D. C. Day" in honor of the Society. This action was approved by the Committee.

Dr. Sanders moved that a breakfast be held in Atlantic City in June during the American Medical Association meeting with representatives of the Medical Exhibitors Association, to which officers and active members of Southern would be invited. This motion was seconded and duly carried.

The Executive Committee Meeting adjourned at 4:30 p.m.

R. L. SANDERS, M.D., *Chairman*
V. O. FOSTER, *Executive Secretary*

Exhibit A

The Retirement Committee composed of Dr. Olin S. Cofer (one year), Atlanta, Dr. Lee F. Turlington (two years), Birmingham, and Mr. C. P. Loranz (three years), Birmingham, has not been able to have a formal and legal meeting to set up the Retirement Committee as provided for in the trust agreement. The attorney holds that the first meeting must be of the full committee to elect a Chairman and a Secretary before the Committee can function legally. At subsequent meetings after the Committee is organized, business can be transacted with a majority present. It is hoped that soon three members of the Committee, two living in Birmingham, and one in Atlanta, can get together.

I have been in touch with both Dr. Cofer and Dr. Turlington and also conferred with the attorney, Mr. Samuel H. Burr. Dr. Cofer and Dr. Turlington join with me in recommending to the Executive Committee that in line with the action of the Council the retirement compensation for Dr. and Mrs. M. Y. Dabney, effective December 1, payable quarterly, be for Dr. Dabney $125.55 per month ($89.10 from the retirement trust and $36.45 from the retirement pension reserve), and for Mrs. Dabney $70.67 per month ($49.89 from the retirement trust and $20.78 from the retirement pension reserve), both Dr. and Mrs. Dabney to be retired as of December 1, 1954 and retirement compensation to be effective from that date.

This will be thirty per cent of the salary of Dr. and Mrs. Dabney as of November 30 plus one-half of one per cent for thirty-three years for Dr. Dabney and twenty-five years for Mrs. Dabney. This then will be the same as other employees will receive from the trust plus their social security.

(Signed) C. P. LORANZ, *For the Committee*

EXECUTIVE COMMITTEE MEETING

November 11, 1955

The Executive Committee of the Council of the Southern Medical Association met in Houston, Texas, Shamrock Hotel, Friday, November 11, 1955, at 2:00 p.m. Present: Dr. R. L. Sanders, President, Memphis, Tennessee, Chairman, presiding; Dr. W. Raymond McKenzie, President-Elect, Baltimore, Mary-

land; Dr. J. P. Culpepper, Jr., First Vice-President, Hattiesburg, Mississippi; Dr. Milford O. Rouse, Chairman of the Council, Dallas, Texas; Dr. J. Morris Reese, Baltimore, Maryland; and Dr. A. Clayton McCarty, Louisville, Kentucky. Sitting with the Committee by invitation of the Chairman: Mr. C. P. Loranz, Advisor and Professional Relations Counselor, Birmingham, Alabama; Mr. V. O. Foster, Executive Secretary-Treasurer and Managing Editor, Birmingham, Alabama; Mr. Robert F. Butts, Business Manager, Birmingham, Alabama; and Dr. R. H. Kampmeier, Editor, Nashville, Tennessee.

The Committee was called to order by the Chairman, Dr. R. L. Sanders, Memphis, Tennessee.

Minutes of the Executive Committee Meetings held on November 11, 1954, in St. Louis, Missouri, and on January 29, 1955, in Birmingham, Alabama, having been previously submitted to the Executive Committee by mail, were reviewed. It was moved and seconded that they be adopted as submitted. Motion was carried.

REPORTS OF OFFICERS

Reports of the following officers which had been mailed in advance to Committee members were accepted: Mr. V. O. Foster, Executive Secretary-Treasurer; Mr. Robert F. Butts, Business Manager; Mr. C. P. Loranz, Advisor and Professional Relations Counselor; and Dr. R. H. Kampmeier, Editor of the JOURNAL. (The reports are published in full as part of the minutes of the Council, pages 413-415).

RECOMMENDATIONS TO THE COUNCIL

Following thorough discussion, the Executive Committee, upon proper motion made the following recommendations to the Council for consideration at its regular session in Houston on November 12, 1955:

(1) That Miami Beach be designated as the site for the 1957 Annual Meeting.

(2) That the Council reaffirm its position of not accepting advertisements involving alcoholic beverages for JOURNAL advertising.

(3) That officers of the Southern Medical Association meet with representatives of the Medical Exhibitors Association annually.

(4) That the present policy of not accepting exhibits and complimentary distribution of soft drinks, cigarettes and other favors be continued.

(5) That the proposed budget be amended to provide for a payment of $6,000.00 into the corpus of the Retirement Fund during the present fiscal year.

(6) That the present policy of the Editorial Board in rejecting for publication any papers not regarded by them as suitable, be retained.

(7) That publication of discussions of presented papers be limited to discussions formally scheduled, and to abstracts of extemporaneous discussions only when requested by an officer of the Section. Such discussions to be submitted in writing.

(8) That the Council approve and recommend the following change in the By-Laws at this annual session: Delete Section 4 of Chapter 7 of the By-Laws and substitute: "There shall be a Distinguished Service Award of the Association which shall be awarded annually to any member in recognition of outstanding contributions to the advancement of medical science. Any member of the Association shall be eligible to receive the award and nominations may be made by any member of the Association. An unpublicized committee of at least five members with the First Vice-President as Chairman to be known as the 'Committee on the Distinguished Service Award' shall be appointed by the President to canvass and evaluate the work of the various nominees and shall submit the names of three nominees to the Council which shall elect one of the three as the recipient of the award to be publicly presented at the last general session of that meeting."

(9) That the following additional amendments to the Constitution and By-Laws be made:

a. Delete the words "Section on Medical Education and Hospital Training" from Article 4 of the Constitution—Scientific Work. (This Section became inactive at the St. Louis meeting, 1954.)

b. Delete the words "or within ten days thereafter" from Chapter 2, Section 5 of the By-Laws. (Present mechanics of JOURNAL publication will be expedited if authors are expected to turn in manuscripts when read.)

c. Delete Section 6, Chapter 2, of the By-Laws, which reads as follows:

"Three associate editors are to be appointed, recommended by the Council, one for one year, one for two years and one for three years, and thereafter one each year for three years, these to be in an advisory capacity, the Editor not being required to seek the advice of the associate editors except if and when he desires to do so." (This is now in conflict with Section 7, Chapter 4—By-Laws.)

(10) That appropriate ceremonies commemorating the founding of the Southern Medical Association be held in Chattanooga on October 2 and/or 3, 1956, with Mr. C. P. Loranz to serve as Chairman of a Committee on Arrangements which shall be appointed by the President. A letter of invitation from the Chattanooga-Hamilton County Medical Society to the Southern Medical Association to hold ceremonies commemorating the founding of the Southern Medical Association in Chattanooga had been received and was presented to the Executive Committee.

(11) That an appropriate history of the Southern Medical Association be compiled and printed by the time of the October, 1956, ceremonies commemorating the founding of the Southern Medical Association and that the incoming President be authorized to appoint a Publications Committee of five members with Mr. C. P. Loranz to serve as an *ex-officio* member of the Committtee, and that this historical sketch be dedicated to Mr. Loranz. (An appropriation of $5,000.00 was recommended to the Council to cover printing and clerical expenses for the printing of the history.)

(12) That the Southern Medical Association provide for a reduced subscription rate to the SOUTHERN MEDICAL JOURNAL to all approved interns and residents within the territory of the Southern Medical Association at a rate of $3.00 per year.

(13) That discretion be used in providing gratis subscriptions to foreign medical schools and libraries, and that any such requests for complimentary subscriptions be passed on by Managing Editor, Business Manager, and Editor.

(14) That the Council approve making the JOURNAL available at a special rate of $6.00 per year, estimated actual cost of printing and mailing, to reputable medical libraries (non-federal).

(15) That the Council, by proper motion, state that it looks with disfavor upon the acceptance of complimentary entertainment by the Association or any of its Sections.

(16) That the general plan for the Washington, 1956, meeting provide for a "D. C. Day" on Monday with two major sections in general medicine and surgery to be provided by the Medical Society of the District of Columbia; that a General Opening Session be held Monday evening dedicated to a formal celebration of the Association's Golden Anniversary; that the annual dinner dance on Wednesday evening be omitted for 1956; and that the regular sessions of the various sections begin on Tuesday morning.

(17) That the Budget be amended to provide $500.00 for the World Medical Association.

(18) That at the discretion of the Executive Secretary, the Executive Secretaries of other medical organizations be extended invitations to attend the annual meeting of the Southern Medical Association.

(19) That a special committee be appointed to study the current problem of paying expenses and/or honoraria to out-of-territory guest speakers.

(20) That the incoming President, Dr. W. Raymond McKenzie, appoint a committee to study the advisability of establishing Life Memberships, and to report its recommendations at an early convenient time.

(21) That the Chairman of the Council appoint a committee to study the advisability of inviting representatives of the senior medical classes of certain medical schools to the annual sessions of the Southern Medical Association.

(22) That the incoming President appoint a committee to study and explore possibilities of a permanent home for the Association and report back to the Council at the earliest date.

(23) That the Executive Committee be empowered to make any needed changes in salaries of Administrative Officers.

The Executive Committee adjourned at 5:00 p.m.

R. L. SANDERS, M.D., *Chairman*
V. O. FOSTER, *Executive Secretary*

Upon motion duly made, seconded, and carried, the report of the Chairman of the Executive Committee was accepted.

The specific recommendations of the Executive Committee to the Council were taken up individually and the following actions taken: (See list of recommendations above)

1. Approved (Miami Beach 1957 meeting)
2. Approved (Non-acceptance alcoholic beverage advertising)
3. Approved (Annual Medical Exhibitors Association breakfast)
4. Approved (with the following amendment: "Until such time as space is available") (Not accepting soft drink exhibits)
5. Approved ($6,000 payment to retirement fund)
6. Approved (Editorial Board discretion on papers)
7. Approved (Dispensing with publication of extemporaneous discussion)
8. Approved (By-Law amendment creating Distinguished Service Award)
9. Approved (Technical By-Law amendments)
10. Approved (Commemoration ceremonies, Chattanooga, October 2-3, 1956)

11. Approved (Authorization of Southern Medical History $5,000 appropriation)
12. Approved ($5.00 JOURNAL rate for interns and residents)
13. Approved (Complimentary subscriptions—foreign requests)
14. Approved ($6.00 JOURNAL rate—medical libraries)
15. Approved (Rejection—complimentary entertainment)
16. Approved (General plan Washington meeting)
17. Approved ($500.00 appropriation—World Medical Association)
18. Approved (State Executive Secretaries—invitation)
19. Approved (Committee on Guest Speakers' Expense)
20. Approved (Committee on Life Membership)
21. Approved (Committee on Medical School Representatives)
22. Approved (Appointment—Home Building Committee)
23. Approved (Administrative salaries—Executive Committee authority)

The proposed budget for the fiscal year, October 1, 1955, to September 30, 1956, by the Executive Secretary was reviewed in detail. The official budget as amended and adopted is as follows:

OFFICIAL BUDGET

Southern Medical Association

October 1, 1955-September 30, 1956*

ESTIMATED RECEIPTS:				
Journal Advertising			$140,000.00	
Dues			90,000.00	
Exhibits (Houston)			28,000.00	
Subscriptions to Journal			6,000.00	
Reprints (10% profit)			1,000.00	
Total Estimated Receipts				$265,000.00
Estimated Cash on Hand (October 1, 1955)				75,000.00
Total Cash Available for Budget Year				$340,000.00

APPROPRIATIONS:	*Journal & Editorial Dept.*	*Professional Relations Dept.*	*General Admin. Dept.*	*Total*
Journal Printing	$80,000.00			$80,000.00
Cuts & Electros	4,000.00			4,000.00
Journal Wrappers	2,000.00			2,000.00
Journal Mailing (2nd Cl.)	2,400.00			2,400.00
Subsidized Sub. Rate (Int. & Res.)			$3,000.00	3,000.00
Travel Expense	800.00	$3,600.00	4,800.00	9,200.00
Salaries (Exhibit A)	12,150.00	14,640.00	43,640.00	70,430.00
Annual Meeting (Washington)			40,000.00	40,000.00
Annual Meeting Med. Stud. Rep. Exp.			750.00	750.00
Office Expense (Exhibit B)	450.00	1,832.00	23,341.00	25,623.00
Replacement & New Equipment			3,000.00	3,000.00
Dues & Contributions (Exhibit C)		500.00	13,150.00	13,650.00
Insurance & Taxes (Exhibit D)			3,050.00	3,050.00
Profes. Serv.			1,000.00	1,000.00
Exec. Committee Expense			1,000.00	1,000.00
Section Officers' Expense			1,000.00	1,000.00
Quarterly Bulletin			3,600.00	3,600.00
Special Appropriation—History of Sou. Medical Assn.		5,000.00		5,000.00
Operating Contingency (1%)			3,400.00	3,400.00
Total Appropriations	$101,800.00	$25,572.00	$144,731.00	$272,103.00
Contingency Fund (Unappropriated)				67,897.00
GRAND TOTAL				$340,000.00

*As amended by Council—Houston, November 12, 1955.

REPORT OF COMMITTEES

THE INSURANCE COMMITTEE

DR. GRAYSON CARROLL, *Chairman*

Your insurance committee consisting of Dr. Clayton McCarty, Dr. Fount Richardson, and Drs. Sanders and Rouse, and Mr. Foster as *ex-officio* members, have been actively engaged with Mr. Charles Finley in developing an insurance program for members of the Southern Medical Association. Mr. Foster spent two days in Chicago with Mr. Finley, which was most valuable. Out of it developed the lovely brochure in orange and black as sent out recently. Your chairman also spent a day in Chicago with Mr. Finley recently going over the various provisions of the program. A few of these matters deserve some clarification. First, it should be stated that Mr. Finley is our broker representing the expert on our team and is engaged to work for us and not for the insurance company. If the company with which we are now doing business does not give us what we think we deserve, he has the privilege, after consultation with us, of changing the company to suit our interests better. I explained to him that we were quite disappointed that we did not obtain the 50 per cent of our members insured during the enrollment period and inquired if it would not be advisable to open up another enrollment period. It was pointed out to me that since we had not reached the 50 per cent participation of members, the policies that were issued were good risks only and as a result of that fact the insurance program today has a better permanency and stability. Had everyone been taken in without screening, not only the members of the Southern Medical but many of the nonmembers who were unable to obtain policies because of impaired risks would have been included in our group, which would have increased the loss ratio a great deal; in fact, would have made it probably prohibitive. We now have a screened group and as a result an excellent loss ratio. If the loss ratio continues to be good, additional benefits will be provided with no increase in the premiums. On the other hand if the loss is going to run too high, it may become necessary for the insurance company to increase the premiums. This has occurred in some groups whose members have been taken in regardless of the medical history.

Loss risks is constantly being reviewed by Mr. Finley and will be given to your insurance committee from time to time and proper adjustments discussed.

It should also be stated that when this program was first inaugurated sickness benefits were payable for only two years. Since that time these have been increased so that the sickness benefits go to five years. When this program was first inaugurated only one plan was available. In the last three months this program has been made more flexible and three different plans are available as indicated in the brochure. All of the other details are clearly described in the brochure though it will not be included in this report.

We made inquiry as to whether women members of the Association were asked for a higher premium rate than the men, as is done in other insurance policies. Mr. Finley stated that they were not written up, but they were limited to accepting the "C" policy and in doing so they were given a better policy than can be obtained anywhere else by women.

While at the office in Chicago I saw a new machine which Mr. Finley has recently purchased primarily to carry out the program of the Southern Medical Association. This was an addressograph with plates of every doctor in the states covered by the Southern Medical Association. It is his intention to send out from time to time notices pertaining to the Southern Medical Association insurance program. This is in an effort to not only increase the participation in the insurance program but at the same time to increase the membership of the Southern Medical Association.

Your committee, together with the *ex-officio* members, met in Houston and after discussing at length the features and program presented have come to the conclusion that the Southern Medical Association has an insurance program which is as good as any presented by an insurance group and in many ways is superior to most of the group insurance programs presented elsewhere. The committee is most appreciative for the valuable work accomplished by Mr. Foster during his visit to Chicago and also the interest and earnestness of Mr. Charles O. Finley.

Mr. Finley explained that the Southern Medical Association's program was written on a true group basis; that is, a master policy has been issued to the Southern Medical Association which is deposited in the offices of the Southern Medical Association; and that a certificate of insurance is issued to each physician insured. This means that the Association controls the program for the protection of its members at all times and actually if the Association is not satisfied with the services rendered by both the insurance company and the broker, we have the privilege of making a change at the end of any anniversary year of the policy. It should be said, however, that your committee is well pleased both with Charles O. Finley Company and also the Continental Casualty Company carrying the insurance.

Respectfully submitted by your insurance committee.

(Signed) GRAYSON CARROLL, M.D., *Chairman*
CLAYTON MCCARTY, M.D.
FOUNT RICHARDSON, M.D.
Ex-Officio Members
MILFORD O. ROUSE, M.D.
R. L. SANDERS, M.D.
MR. V. O. FOSTER

COMMITTEE ON MEDICAL STUDENT REPRESENTATIVES

DR. WAVERLY R. PAYNE, *Chairman*

Your Committee has considered the method and means of having a representative of each medical school attend the annual meeting of the S.M.A. as its guest with all expenses paid.

There are twenty-nine medical schools in the territory of the S.M.A. from which students may be selected. There must be an agreement with the dean of the schools under consideration that the senior class be given the privilege of electing its official representative to S.M.A. and that the student so elected be advised that it is his duty to give a report on his observations as soon as possible after returning to college.

It is suggested that a committee of two or three members of S.M.A. be appointed by the President, with these duties: first, to submit to the Executive Secretary and Business Manager a suggested list of schools to be represented at the meeting and, secondly, to get from them a reasonable per diem travel expense. Therefore, the number of schools contacted would depend upon the estimated cost. Under such a plan the number of students invited to any given meeting would depend upon the budget allowance.

It is hoped that such a plan might serve to stimulate the interest of our future young doctors in the affairs of organized medicine. Furthermore, it should impress upon them the immense potential of medical talent and a keener interest in Southern Medicine.

(Signed) W. R. PAYNE, M.D., *Chairman*
H. L. CLAUD, M.D.
JACK C. NORRIS, M.D.

COMMITTEE ON GUEST SPEAKERS' EXPENSES

DR. J. MORRIS REESE, *Chairman*

The Committee recommends the payment of the transportation expense of guest speakers from outside the states included in the Southern Medical Association area.

The Committee wishes to submit two other recommendations: (1) The Committee recommends that Section Officers be required to submit the names of all guest speakers in order of their preference to the Executive Committee of the Council for clearance by the time of the January meeting. (2) The Committee offers the suggestions of exploring the possibility of using these guest speakers at scientific luncheons, for panel discussions or refresher courses.

(Signed) J. MORRIS REESE, M.D., *Chairman*
DONALD S. DANIEL, M.D.
FOUNT RICHARDSON, M.D.
ROBERT D. MORETON, M.D.

HOME BUILDING COMMITTEE

DR. LEE F. TURLINGTON, *Chairman*

The Committee appointed as "The Home Building Committee" unanimously moves that the Council go on record as favoring the erection of a building for the permanent home of the Southern Medical Association in the vicinity of Birmingham, Alabama, and that it direct the Home Building Committee to proceed to purchase a suitable site for such a building; that the Council direct that the Treasurer pay from the funds of the Southern Medical Association the monies necessary for the consumation of such a contract. Further, that the said Committee be directed to have drawn up preliminary plans for such a building to be presented to the Executive Committee at its meeting in January, 1956.

(Signed) LEE F. TURLINGTON, M.D., *Chairman*
JACK C. NORRIS, M.D.
HENRY H. TURNER, M.D.
J. KELLY STONE, M.D.
HARRY LEE CLAUD, M.D.

SCIENTIFIC AWARDS COMMITTEE

DR. FOUNT RICHARDSON, *Chairman*

Your Committee on Scientific Awards visited the scientific exhibits, and after studying the exhibits, makes the following report:

First award to Joseph M. Hill, Alice Smith, Robert J. Speer and D. J. Falco, Wadley Research Institute and Baylor University Hospital, Dallas, Texas, for their exhibit on "Leukemia."

Second award to Harwell Wilson, Edward H. Storer and E. E. Bramlitt, University of Tennessee Medical School, Department of Surgery, Memphis, Tennessee, for their exhibit on "Problems in Vascular Surgery."

Third award to Milton L. McCall, Department of Obstetrics and Gynecology, Louisiana State University School of Medicine, New Orleans, Louisiana, for his exhibit on "Cerebral Blood Flow and Metabolism in Toxemia of Pregnancy."

Honorable mention to: William D. Logan, W. Faust Durden, Thomas L. Buttram and William A. Hopkins, Department of Surgery, Grady Memorial Hospital, Atlanta, Georgia, for their exhibit on "The Anatomy of Bronchoscopy."

James M. Moss, Georgetown University School of Medicine, Washington, D. C., for his exhibit on "Today's Great Imitator, Diabetes Mellitus."

Michael E. DeBakey, E. Stanley Crawford, Oscar Creech, Jr., and Denton A. Cooley, Baylor University College of Medicine; Methodist, Jefferson Davis and Veterans Administration Hospitals, Houston, Texas, for their exhibit on "Arterial Homografts in the Treatment of Peripheral Arteriosclerotic Occlusions."

Julian M. Ruffin, Duke University School of Medicine, Durham, North Carolina; David Cayer, Bowman Gray School of Medicine, Winston-Salem, North Carolina; John Atwater, Atlanta, Georgia; and Benjamin Oren, Miami, Florida, for their exhibit on "Evaluation of Drugs in the Treatment of Peptic Ulcer."

Albert McCulloh, Brady, Texas, for his exhibit on "An Epidemic of Psittacosis Contracted by Poultry Workers."

J. E. Markee, Duke University School of Medicine, Durham, North Carolina, for his exhibit on "The Anatomy of the Hand."

R. H. Rigdon, J. K. Walker and A. H. Teddlie, University of Texas Medical Branch, Galveston, Texas, for their exhibit on "Hemangiomas—An Experimental Study."

(Signed) FOUNT RICHARDSON, *Chairman*, Fayetteville, Arkansas
A. J. GILL, Dallas, Texas
C. M. CARAVATI, Richmond, Virginia
DONALD W. SMITH, Miami, Florida
F. A. HOLDEN, Baltimore, Maryland

(The Committee on Scientific Awards consists of five members of the Association, appointed by the Chairman of the Council, one to represent pathology, one medicine, one surgery and two at large, one member to be a member of the Council who shall be Chairman of the Committee.)

COMMITTEE ON MEDICAL EDUCATION AND HOSPITALS

During the Association year just ending there have been referred to this Committee no suggestions for consideration and no problems to be solved.

It is respectfully suggested that the General Officers and the Council review the report submitted by this Committee which was approved by the Council at the St. Louis meeting, November 8-11, 1954, and make efforts to implement the recommendations.

Currently there is much needless duplication of effort in the field of postgraduate medical training. The real teachers are having their efforts dangerously diluted through overloading and this leads to mediocrity which will kill any program—medical or otherwise.

The conclusion must inevitably be reached that the only effective effort this Association can offer in the field of postgraduate medical education cannot be by independent effort but by cooperating with other agencies which are working for the same purpose and ideal. No effort will bring fully desired results unless and until the men on the firing line, the practitioners, have a yearning for this knowledge greater than a willingness to merely accept or passively encompass that which is offered.

It is desired to emphasize two thoughts: understanding and sharing. There is need for representative members of the several Southern state organizations to get together for an "understanding" of the problems of postgraduate medical education; and how, if indeed, the Southern Medical Association is needed and wanted as a participant. They should then establish plans for "sharing" what this Association can offer and do at a reasonable cost in such manner that the greatest numbers may participate and benefit. Your Committee urges a search for light on the need, the development of an understanding and a method of sharing. It is recommended that these principles be worked out in a "target area" composed of three or four states as a "trial balloon" or experiment. After three to five years the experiences should be evaluated—the conflicts as well as the favorable aspects. If desired, this experience can then be used as a "springboard" to encompass a larger area.

(Signed) M. PINSON NEAL, M.D., *Chairman*
WALTER E. VEST, M.D.
DANIEL L. SEXTON, M.D.
HENRY H. TURNER, M.D.
W. KENDRICK PURKS, M.D.

DOCTOR-HOSPITAL RELATIONSHIP COMMITTEE

DR. E. M. DUNSTAN, *Chairman*

No assistance has been requested of the Committee during the year 1955. Several complaints have come to the attention of individual members of the Committee, but these apparently are being solved at local levels.

The problems in this field in 1955 continue to be essentially the same as those that have confronted us since 1947, and the basic principles, the suggested action, and the previous recommendations are reaffirmed. All cases of infraction should continue to be settled at the local level, whenever possible. When this is not possible, this Committee, if called upon, will exert every effort to find a solution in accordance with the basic principles previously formulated.

Since pathologists, radiologists, and anesthesiologists are at present the specialty groups most affected, we recommend that the officers of these respective sections receive a copy of this Committee's annual report, so that they may know that the Committee stands ready to assist them when needed.

Respectfully submitted,
(Signed) E. M. DUNSTAN, M.D., *Chairman*
J. B. LUKINS, M.D.
T. DEWEY DAVIS, M.D.
V. EUGENE HOLCOMBE, M.D.
ROBERT A. ROBINSON, M.D.

ADVISORY COMMITTEE TO WOMAN'S AUXILIARY

DR. MILFORD O. ROUSE, *Chairman*

The Executive Committee, which is the Advisory Committee to the Woman's Auxiliary, held several conferences with the Officers of the Woman's Auxiliary on the subjects of:

1. The disposition of the Jane Todd Crawford Memorial fund.
2. The budget for the Woman's Auxiliary.

Following the conferences, the following proposed budget for the Woman's Auxiliary was submitted:

PROPOSED BUDGET FOR THE YEAR

1955-1956

Convention Expenses	$ 600.00
News Letter (Quarterly)	200.00
President's Expenses for Auxiliary Operation	300.00
Stationery	100.00
President-Elect's Expenses	50.00
Doctor's Day Awards	25.00
Doctor's Day Promotion	40.00
Contingency Fund	50.00
Past-President's Pin	15.00
Research and Romance of Medicine Fund	25.00
Memorial Service Fund	20.00
Councilors (17 at $3.00 each)	51.00
Membership Chairman	5.00
Nominating Committee	5.00
Treasurer	5.00
Program Chairman	5.00
Recording Secretary	25.00
Historian	10.00
Total	$1,531.00
President's Traveling Expense	$1,750.00
Grand Total	$3,281.00

(Signed) MRS. JOHN J. O'CONNELL, *President-Elect*
MRS. SAMUEL J. SULLIVAN
MRS. R. T. TRAVIS, *Acting Chairman*

The Council subsequently appropriated $3,300.00 for the Woman's Auxiliary for the fiscal year 1955-1956.

It was agreed between the Executive Committee and the Officers of the Woman's Auxiliary that the Jane Todd Crawford Memorial fund (approximately $5,000.00) would be used for the following purposes:

1. To provide funds to be used for complimentary subscriptions to the SOUTHERN MEDICAL JOURNAL to residents in Gynecology in Southern hospitals.
2. To defray the cost of printing and distributing a small pamphlet or brochure recounting the history of Jane Todd Crawford and Dr. Ephraim McDowell.

It was further agreed that:

1. The Treasurer of the Woman's Auxiliary would retain custody of the Jane Todd Crawford Memorial fund and would make payments to the Treasurer of the Southern Medical Association for payment of complimentary JOURNAL subscriptions to residents in Gynecology on the basis of $3.00 per year.
2. The fund would be allocated for the above purpose in proportion percentagewise of the Southern Medical Association membership in the various states.
3. The Woman's Auxiliary create or maintain a Jane Todd Crawford Memorial Fund Committee to secure names and addresses of potential recipients of the complimentary JOURNAL to residents in Gynecology.
4. The above Committee maintain contact with the recipients of such complimentary subscriptions and invite them to inform the Southern Medical Association headquarters office of any changes in address.
5. The descriptive brochure and its distribution be handled by the Auxiliary's Jane Todd Crawford Memorial Fund Committee.

Respectfully submitted,
DR. MILFORD O. ROUSE, *Chairman*

GOLF COMMITTEE

Your Golf Committee wishes to report the following results:

Winner of the *Daily Oklahoman* and *Times* Cup for low gross, junior class was Dr. L. L. Lemak of Houston, Texas. Score was 78.

Winner of the *Miami Daily News* Cup for low gross, senior class was Dr. O. E. Smith of Memphis, Tennessee. Score 85-13 net 72.

Winner of the *Dallas Morning News* Cup, handicap for low net, was Dr. Truett James, Dallas, Texas. Score 79-7 net 72.

There were by far fewer participants than we expected but I feel certain this was due to the cold Yankee winds which invaded our good Southern clime.

Thanks for a wonderful meeting here and for the privilege of acting as golf tournament chairman.

(Signed) T. A. SANDERSON, M.D., *Chairman*

ACTION OF THE COUNCIL ON COMMITTEE REPORTS

Insurance Committee—The Association's Group Insurance Program was reviewed in detail with Mr. Charles O. Finley, the Administrator. The Committee's report was then accepted with a request that the Committee continue to review and evaluate the Group Insurance Program.

Committee on Medical Student Representatives—The report was accepted and the President was instructed to appoint a special Committee to work out details for inviting representatives to the 1956 meeting and empowered the Executive Committee to carry out the plan.

Committee on Guest Speakers' Expenses—The Committee's report was received and referred to the Executive Committee for action at its interim meeting.

Home Building Committee—Following the Committee's report, a lengthy and detailed discussion of a permanent home for the Association was held. Items variously discussed included the location, the site, the price of available sites, the type of building, and methods of financing. Since there was no unanimity of opinion on the technical details, the Committee's report (which included a motion) was tabled. It was moved, seconded, and carried that the Council request the Home Building Committee to actively pursue a study of the acquisition of a permanent home and report back to the Council and the Executive Committee as expeditiously as possible. The motion was amended to provide for publicizing the home building project in the JOURNAL and to defray the necessary expenses incurred by the Home Building Committee.

Scientific Awards Committee—The report was accepted and the Committee thanked for its work.

Committee on Medical Education in Hospitals—The report was accepted.

Doctor-Hospital Relationship Committee—The report presented by correspondence was accepted.

Advisory Committee to Woman's Auxiliary—Report and recommendations approved.

OTHER COUNCIL ACTIONS

(New Business)

1. *Southern Society of Cancer Cytology*—Discussion of conjoint society relationships. Decision—Programs of conjoint societies which conflict with or overlap in time any of the activities of the Association or any of its Sections will not be published in the Official Program.
2. *Future Meetings Schedule*—Formal invitations were received from the local societies involved and the following meeting places selected:

   1958 New Orleans—November 3-6
   1959 Atlanta—November 9-12
   1960 Baltimore—November 14-17

   (The 1956 and 1957 meetings had been previously scheduled as follows: 1956, Washington, D. C., November 12-15; 1957, Miami Beach, November 11-14.)
3. *Expression of Appreciation*—The Executive Secretary was instructed to convey appreciation to the Harris County Medical Society for its splendid cooperation.

ELECTIONS BY THE COUNCIL

The following officers were duly elected as follows:

1. *Executive Committee*—Dr. Henry H. Turner, Oklahoma City, Oklahoma, to succeed Dr. Milford O. Rouse, Dallas, Texas.
2. *Board of Trustees*—Dr. R. L. Sanders, Memphis, Tennessee, succeeding Dr. James A. Ryan, Covington (six-year term).
3. *Retirement Fund Committee*—Dr. James G. Galbraith, Birmingham, (three-year term) to succeed Dr. Olin S. Cofer, Atlanta.

4. *Chairman of the Council*—Dr. J. Morris Reese, Baltimore, to succeed Dr. Milford O. Rouse, Dallas.
5. *Vice-Chairman of the Council*—Dr. A. Clayton McCarty, Louisville, to succeed Dr. J. Morris Reese, Baltimore.

ELECTION OF OFFICERS

The Council, sitting as the Nominating Committee, placed the following in nomination for election to office by the Association:

President-Elect—Dr. J. P. Culpepper, Jr., Hattiesburg.
First Vice-President—Dr. W. Kelly West, Oklahoma City.
Second Vice-President—Dr. Denton Kerr, Houston.

The above officers were duly and unanimously elected by the membership of the Association in business session, Wednesday, November 14, 1956.

The complete, Official Program of the Houston Meeting, listing the programs of the twenty Sections, the conjoint societies, the Woman's Auxiliary, scientific exhibits, technical exhibits, alumni meetings, and special events, was published in the October, 1955 issue of the JOURNAL and is incorporated into these minutes by reference.

MILFORD O. ROUSE, M.D., *Chairman of the Council*

Attest:

V. O. FOSTER, *Executive Secretary*

MEMBERS BY STATES

The following is a comparative statement of membership of the Southern Medical Association for the past eight years:

	1947	1948	1949	1950	1951	1952	1953	1954	1955
Alabama	492	521	524	550	555	602	736	729	723
Arkansas	230	230	217	212	219	216	234	228	233
District of Columbia	198	223	224	200	188	181	210	190	195
Florida	567	757	822	807	741	798	1009	1094	1094
Georgia	495	546	596	557	517	601	814	901	789
Kentucky	512	510	520	554	491	466	524	513	480
Louisiana	332	441	435	419	425	449	504	493	506
Maryland	511	572	552	486	420	406	472	467	483
Mississippi	272	272	270	298	271	250	312	309	307
Missouri	649	620	601	597	582	554	580	593	625
N. Carolina	562	496	519	500	453	460	643	644	623
Oklahoma	320	319	307	290	279	287	281	308	290
S. Carolina	244	260	251	258	249	252	323	332	337
Tennessee	495	509	503	503	473	518	565	552	571
Texas	739	745	750	742	1075	1144	1141	1045	1204
Virginia	459	474	481	472	442	425	563	554	544
W. Virginia	254	269	262	260	230	273	332	318	297
Other States and Foreign	126	129	120	126	123	212	105	107	110
Totals	7447	7893	7954	7831	7733	8094	9348	9377	9411

AUDITOR'S REPORT

Southern Medical Association
Birmingham, Alabama

We have examined the balance sheet of Southern Medical Association as of September 30, 1955, and the related statements of income and retained earnings for the year then ended. In connection therewith, we have reviewed the accounting procedures and, without making a detailed audit of all transactions, have examined or tested accounting records of the Association and other supporting evidence by methods and to the extent we considered appropriate. We made a similar examination for the fiscal year ended September 30, 1954.

Association dues, JOURNAL subscriptions and income from technical exhibits were recorded on the cash receipts basis. JOURNAL advertising sales and sales of reprints were recorded on the accrual basis. JOURNAL publishing costs were taken into account on the accrual basis. All other expenses, except depreciation, represent cash disbursements.

In our opinion, the acompanying balance sheet and related statements of income and retained earnings, together with supporting exhibits, and subject to the explanations relating thereto, present fairly the financial position of Southern Medical Association at September 30, 1955, and the results of its operations for the year then ended in conformity with generally accepted accounting principles, applied on a basis consistent with that of the preceding year.

NEVILLE, BROWN & REGAN
Certified Public Accountants
/s/ BY CHRIS H. KING, C.P.A.

Birmingham, Alabama
October 18, 1955

BALANCE SHEET

Southern Medical Association

Fiscal Year ending September 30, 1955

Assets	1955
CASH IN BANK:	
The First National Bank of Birmingham—	
Regular Account	$ 82,162.73
Special Exhibit Account	26,148.75
Office Petty Cash Fund	100.00
Total Cash	$108,411.48
U. S. Government bonds—At cost	$ 15,120.00
Accounts receivable:	
Publication and advertising	4,412.99
Employees	100.17
Furniture and fixtures—Cost	27,287.98
Less: Depreciation to date	(14,077.25)
Travel deposit—Eastern Air Lines	425.00
	$141,680.37
Liabilities	
Accounts payable	$ 11,200.63
Advance deposits on exhibits—	
Annual meeting	26,148.75
Retained earnings	104,330.99
	$141,680.37

Statement of Retained Earnings

ADDITIONS:	
Excess of revenue over expenses (Statement)	$ 29,702.79
Accrued interest on U. S. Government bonds transferred to Employees Pension Trust Fund	20,127.50
Total Additions	$ 49,830.29
DEDUCTIONS:	
Cash value of U. S. Government bonds transferred to Employees Pension Trust Fund	$145,187.50
Cash contribution to Employees Pension Trust Fund	12,000.00
Cash contribution to Retirement Committee of Southern Medical Association (For retirement fund reserve)	12,000.00
Total Deductions	$169,187.50
Net Decrease in Retained Earnings	$119,357.21
Retained earnings—Beginning of year	223,688.20
Retained Earnings—End of Year	$104,330.99

Statement of Revenue and Expenses

	Actual
REVENUE:	
Journal advertising	$142,680.74
Membership dues (Includes Journal subscription)	97,893.85
Exhibits—Annual convention	35,675.00
Journal subscriptions, non-members	4,757.29
Reprints (Excess of billings over cost)	1,066.77
Total Revenue	$282,073.65
EXPENSES:	
Journal and Editorial:	
Journal printing	$ 79,308.62
Cuts and electros	3,302.15
Journal wrappers	1,789.28
Journal mailing—Second-class	1,948.00
Salaries	11,246.42
Travel	374.72
Stationery and printing	144.58
Postage	196.20
Total Journal and Publication Expense	$ 98,309.97
Professional Relations:	
Salaries	$ 16,473.40
Travel	2,503.09
Stationery and printing	144.90
Postage	421.34
Office Supplies	257.62
Rent	360.00
Telephone and telegraph	301.54
Electric power	47.62
Total Professional Relations Expense	$ 20,509.51
General Administrative:	
Salaries	$ 44,869.58
Travel	2,536.12
Annual meeting (Schedule)	43,476.00
Stationery and printing	5,297.05
Postage	4,313.98
Office supplies and expense	5,844.05

Rent	5,091.00
Telephone and telegraph	1,230.55
Electric power	717.39
Section officers' expense	1,031.22
Express	203.58
Dues and contributions:	
World Medical Association	500.00
Woman's Auxiliary	2,866.41
Trade Associations	20.00
American Medical Education Foundation	1,000.00
Employees' Hospital Insurance	313.50
Employees' Bonuses	1,065.00
Employees' Refreshments	290.77
Honorary Luncheons, etc.	1,402.32
Flowers	62.53
Insurance and taxes:	
Federal FICA	1,894.70
Ad valorem	194.40
Insurance	473.20
Professional services	3,305.72
Executive Committee expense	766.85
Non-budgeted expenses:	
Depreciation—Furniture and equipment	1,908.95
Discounts allowed	2,629.97
Change of Journal format	246.56
Total General Administrative Expense	$133,551.38
Total Expenses	$252,370.86
Excess of Revenue over expenses	$ 29,702.79
Purchases of new equipment	4,420.70
Total	$ 25,282.09

Revenue, Expenses and Retained Earnings

REVENUE:	1955
Journal Advertising	$142,680.74
Membership dues (Including Journal subscriptions)	97,893.85
Journal subscriptions—Non-members	4,757.29
Reprints (Excess of billing over cost)	1,066.77
Exhibits—Annual convention (Schedule)	35,675.00
Total	$282,073.65
EXPENSES:	
Annual convention expense (Schedule)	$ 43,476.00
Contributions	1,500.00
Cuts and electros	3,302.15
Depreciation—Furniture and fixtures (Schedule)	1,908.95
Discounts	2,629.97
Employees' hospital insurance	313.50
Employees' Christmas gifts	1,065.00
Employees' refreshments	290.77
Express—Outbound	203.58
Executive Committee expense	766.85
Insurance (Schedule)	473.20
Legal and accounting	3,305.72
Lights	765.01
Luncheons	1,402.32
Mailing expense	1,789.28
Office postage	4,931.52
Office rent	5,451.00
Office supplies and expense	6,193.95
Publishing—Southern Medical Journal	79,308.62
Salaries (Schedule)	72,589.40
Second-class postage	1,948.00
Section secretaries' expense	1,031.22
Stationery and printing	5,494.25
Taxes—State and county ad valorem	194.40
—Payroll	1,894.70
Telephone and telegraph	1,532.07
Travel expense	5,413.95
Woman's Auxiliary	2,866.41
Unclassified — Miscellaneous	329.09
Total Expense	$252,370.86
Excess of Revenue over Expenses	$ 29,702.79
Retained earnings—Beginning of year	223,688.20
Total	$253,390.99
Plus: Accrued interest—U. S. Government Bonds transferred to Pension Trust Fund (Credited to surplus)	20,127.50
Total	$273,518.49
Less: Contributions to Employees' Pension Trust Fund	169,187.50
Retained Earnings—End of Year	$104,330.99

Statement of Application of Funds

FUNDS WERE PROVIDED:	
By excess of revenue over expense	$ 29,702.79
By depreciation charged to expense but not paid from current funds	1,908.95
By increase in accounts payable	10,933.51
By decrease in deposits for printing	4,071.18
Total Funds Provided	$ 46,616.43
THESE FUNDS WERE APPLIED:	
To increase cash	$ 11,453.11
To purchase equipment	4,420.70
To increase accounts receivable	1,917.17
To prepay withholding taxes	9.20
To decrease deposits for exhibits	4,816.25
To increase Employees' Pension Trust Fund	24,000.00
Total Funds Applied	$ 46,616.43

ALUMNI AND FRATERNITY REUNIONS—HOUSTON

The following medical schools and fraternities had luncheons or dinners in connection with the Houston meeting:

	Attendance
University of Arkansas School of Medicine, Little Rock, Arkansas	41
Duke University School of Medicine, Durham, North Carolina	51
Emory University School of Medicine, Emory University, Georgia	62
Georgetown University School of Medicine, Washington, D. C.	10
Johns Hopkins University School of Medicine, Baltimore, Maryland	61
University of Louisville School of Medicine, Louisville, Kentucky	50
University of Maryland School of Medicine, Baltimore, Maryland	80
University of Mississippi School of Medicine, University, Mississippi	30
Medical College of the State of South Carolina, Charleston, South Carolina	20
University of Tennessee College of Medicine, Memphis, Tennessee	120
University of Texas Medical Branch, Galveston, Texas	85
Tulane University School of Medicine, New Orleans, Louisiana	163
Vanderbilt University School of Medicine, Nashville, Tennessee	62
Washington University School of Medicine, St. Louis, Missouri	250
Phi Beta Pi Medical Fraternity	35

Phi Delta Epsilon Graduate Club (attendance figure not available).

Phi Chi Medical Fraternity (attendance figure not available).

ACTIVE COMMITTEES

Distinguished Service Award Committee—(five members appointed to unpublicized committee).

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Geriatrics Committee—Dr. Milford O. Rouse, Chairman, Dallas, Texas; Dr. Fount Richardson, Fayetteville, Arkansas; Dr. Joseph S. Stewart, Miami, Florida.

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Nominating Procedure Committee—Dr. A. Clayton McCarty, Chairman, Louisville, Kentucky; Dr. Harry Lee Claud, Washington, D. C.; Dr. H. L. Brockmann, High Point, North Carolina.

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Medical Student Representatives Committee—Dr. H. L. Brockmann, Chairman, High Point, North Carolina; Dr. Donald S. Daniel, Richmond, Virginia; Dr. Charles R. Thomas, Chattanooga, Tennessee.

Trustees Committee—Dr. W. Kelly West, Chairman, Oklahoma City, Oklahoma; Dr. Alphonse McMahon, St. Louis, Missouri; Dr. Walter C. Jones, Miami, Florida.

STATE PROMOTION COMMITTEES

At the Southern Medical Association meeting in St. Louis in November 1954 there was added to Chapter 7, Section 1, of the By-Laws the following: "There may be appointed annually by the President on nomination by the respective Councilors, a Southern Medical Promotion Committee of five members from each state or district, with the respective Councilor being one of the five members and Chairman. Such Promotion Committee shall stimulate interest in the Southern Medical Association in their respective territories, leading to more members and more participation in scientific programs and exhibits."

Alabama

Dr. Lee F. Turlington, Chairman, 1922 South 10th Avenue, Birmingham.
Dr. Thomas J. Anderson, P. O. Box 279, Greensboro.
Dr. J. M. Chenault, 1515 Sommerville Road, Decatur.
Dr. Joe W. Perry, 750 Washington Avenue, Montgomery.
Dr. J. M. Weldon, 309 Government Street, Mobile.

Arkansas

Dr. Fount Richardson, Chairman, 815 Pollard, Fayetteville.
Dr. Jerome S. Levy, 1425 West 7th Street, Little Rock.
Dr. Roy I. Millard, Russellville.
Dr. Euclid M. Smith, 1103 Medical Arts Building, Hot Springs National Park.
Dr. Frieda Wilhelm, 317 State Line Avenue, Texarkana.

District of Columbia

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Dr. William P. Herbst, 1801 Eye Street, Northwest, Washington 6.
Dr. Oscar B. Hunter, Jr., 915 19th Street, Northwest, Washington 6.
Dr. John Minor, 1629 21st Street, Northwest, Washington 9.
Dr. Margaret M. Nicholson, Washington Medical Building, Washington 6.

Florida

Dr. Joseph S. Stewart, Chairman, 803 duPont Building, Miami 32.
Dr. R. B. Chrisman, Jr., 701 duPont Building, Miami 32.
Dr. Charles M. Gray, Citizens Building, Tampa.
Dr. George Dekle Taylor, 111 West Adams Street, Jacksonville 2.
Dr. William C. Thomas, 111 S. W. Third Street, Gainesville.

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Dr. H. P. Cason, Warrenton.
Dr. W. P. Harbin, Harbin Hospital, Rome.
Dr. A. M. Phillips, 1113 Bankers Insurance Building, Macon.
Dr. V. P. Sydenstricker, University Hospital, Augusta.
Dr. John Kirk Train, Jr., 1107 Bull Street, Savannah.

Kentucky

Dr. A. Clayton McCarty, Chairman, Heyburn Building, Louisville 2.
Dr. J. Duffy Hancock, 705 Brown Building, Louisville 2.
Dr. Clifford N. Heisel, Coppin Building, Covington.
Dr. Samuel A. Overstreet, 714 Heyburn Building, Louisville 2.
Dr. Harvey B. Stone, 123 East 13th Street, Hopkinsville.

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Dr. J. Kelly Stone, Chairman, 1146 Canal Building, New Orleans 12.
Dr. J. E. Knighton, 2622 Greenwood Road, Shreveport 2.
Dr. T. Jeff McHugh, 2335 Oleander Street, Baton Rouge.
Dr. Walter O. Moss, 1620 Foster Street, Lake Charles.
Dr. George W. Wright, 400 St. John Street, Monroe.

Maryland

Dr. J. Morris Reese, Chairman, Medical Arts Building, Baltimore 1.
Dr. Thomas A. Christensen, 6905 Baltimore Boulevard, Calvert Hills, College Park.
Dr. F. A. Holden, Medical Arts Building, Baltimore 1.
Dr. Gerald W. LeVan, Boonsboro.
Dr. E. P. Thomas, 7 East Church Street, Frederick.
Dr. Zack J. Waters, 410 South Division Street, Salisbury.

Mississippi

Dr. J. F. Lucas, Chairman, 501 West Washington Avenue, Greenwood.
Dr. Frank M. Acree, 130 North Shelby Street, Greenville.
Dr. Lamar Arrington, 1115 22nd Street, Meridian.
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Dr. Guy T. Vise, Vise Clinic Building, Meridian.

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Dr. Grayson Carroll, Chairman, 609 Humboldt Building, St. Louis 3.
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Dr. Harold M. Gilkey, 1624 Professional Building, Kansas City.
Dr. Raymond A. Ritter, 1912 Broadway, Cape Girardeau.

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Dr. Fred T. Fox, 605 Gore, Lawton.
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Dr. John van de Erve, Jr., 100 S. Battery, Charleston 21.
Dr. J. H. Jameson, Professional Building, Easley.
Dr. C. K. Lindler, 810 Albian Road, Columbia 39.
Dr. W. Thomas Brockman, 304 East North Street, Greenville.

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Dr. William A. Garrott, Box 638, Cleveland.
Dr. Robert A. Knight, Campbell Clinic, 869 Madison Avenue, Memphis 3.
Dr. Charles P. Wofford, 115 West Fairview Avenue, Johnson City.
Dr. Kate Savage Zerfoss, 165 Eighth Avenue, North, Nashville 3.

Texas

Dr. Robert D. Moreton, Chairman, 1217 West Cannon Street, Fort Worth 4.
Dr. Milford O. Rouse, 1414 Medical Arts Building, Dallas 1.
Dr. G. R. Hodell, 2418 Travis, Houston.
Dr. James W. Rainer, 1200 North Texas Avenue, Odessa.
Dr. A. C. Ressmann, 174 Medical Arts Building, San Antonio 5.

Virginia

Dr. Donald S. Daniel, Chairman, Johnston-Willis Hospital, Richmond 21.
Dr. Charles M. Caravati, 807 West Franklin, Richmond.
Dr. T. Dewey Davis, 501 East Franklin, Richmond.
Dr. Malcolm H. Harris, West Point.
Dr. Walter B. Martin, 521 Wainwright Building, Norfolk.

West Virginia

Dr. V. E. Holcombe, Chairman, 210-217 Medical Arts Building, Charleston.
Dr. George R. Callender, Jr., 1210 East Virginia Street, Charleston.

Dr. Ross P. Daniel, 111 East Main Street, Beckley.
Dr. Charles N. Slater, Union Building, Clarksburg.
Dr. Walter R. Wilkinson, 336 Woodland Drive, Huntington.

WOMEN PHYSICIANS

The Forty-first Annual Meeting and Dinner for the Women Physicians of the Southern Medical Association was held at the Petroleum Club, Houston, on Monday evening, November 14, at 6:30 o'clock. Dr. Ethel E. Erickson, Houston, Chairman, Women Physicians of the Southern Medical Association, presided.

Marguerite Johnston, columnist for the *Houston Post*, was the guest speaker.

The Houston Committee for Women Physicians was as follows: Dr. Ethel E. Erickson, Chairman; Dr. Mary Ann McKinney; Dr. May B. Bachtel; Dr. Eleanor Blish; Dr. Ray K. Daily; and Dr. G. S. Ham.

THE WOMAN'S AUXILIARY TO SOUTHERN MEDICAL ASSOCIATION

Minutes of the Thirty-First Annual Convention

The Pre-Convention Executive Board Meeting was held in the Jade Room of the Rice Hotel in Houston, Texas on November 14, 1955, with Mrs. Louis K. Hundley presiding.

The invocation was given by Dr. Milford Rouse, Chairman of the Advisory Council of the Southern Medical Association.

The Secretary called the roll of the Committee, to which seven officers, nine committee chairmen, fifteen councilors or representatives and ten past presidents responded.

Mrs. Hundley then introduced our distinguished guests who were Mrs. Mason Lawson, President of the Auxiliary to the American Medical Association; Dr. R. L. Sanders, President of the Southern Medical Association; Mrs. John J. O'Connell, our President-Elect; Dr. Milford O. Rouse, and Dr. W. Raymond McKenzie of the Advisory Council; Mr. C. P. Loranz, Public Relations representative with the office of the Southern Medical Association; Mr. V. O. Foster, Executive Secretary of the Southern office; Dr. Joe Markee, Duke University Medical College and Dr. D. Bailey Calvin, of Galveston.

Mrs. Cosgrove gave a report from absent members and was instructed by the President to send messages to each of them, and also to Dr. Eugene McClure, a note of sympathy on the death of Mrs. McClure.

The President stated that she would make her report at the general session.

The minutes of the Post-Convention board meeting were read and approved.

Mrs. Hundley appointed the following reading committee: Mrs. M. Pinson Neal, chairman; Mrs. Olin S. Cofer, Mrs. W. P. Stoner and Mrs. J. P. Culpepper, Jr.

The treasurer's report was given by Mrs. Maynard Imlaw and by request to be submitted to the Auditing Committee, composed of Mrs. W. G. Thuss, Mrs. W. A. Garrett and Mrs. Oiven Binkley.

Mrs. R. T. Travis read the report of the Budget Committee. (Attached to minutes.) The board voted to recommend this report to the general session.

Mrs. Otis Flynt spoke briefly, welcoming guests and outlining the program of events.

Mrs. John Chenault, Chairman of Revisions, stated that copies of the Constitution with changes had been mailed to the proper persons and stated the proposed change in Article II, which was accepted for recommendation (attached).

The Jane Todd Crawford question was then discussed. Mrs. Perry Melvin stated that the material requested at last year's meeting had been prepared, edited and has been sent to all county and state presidents and also to all officers, keeping them well informed on all information coming to her or any member of the committee.

Dr. Milford Rouse then spoke for the Advisory Council. He suggested a two-part plan—that the Auxiliary print a four page pamphlet about Jane Todd Crawford and Dr. Ephriam McDowell, this to be sent with a subscription to the SOUTHERN MEDICAL JOURNAL, the JOURNAL to be given at a reduced rate of $3.00 with the Council bearing the other $3.00 and these to be sent complimentary as long as the recipient is a resident training in Gynecology in Southern hospitals.

He further recommended that the Auxiliary Treasurer retain and disperse the fund and that it be distributed to each state in proportion to membership in the Southern Medical Association.

Mrs. Cofer moved, seconded by Mrs. L. S. Thompson, to discontinue the collection of funds for the Jane Todd Crawford Memorial. The motion carried.

Mrs. Holcombe moved that the board recommend to the general session that we accept the plan suggested by the Council. This motion also carried.

Mrs. Hundley introduced the two pages, Mrs. Hugh F. Arnold and Mrs. Ray M. Morgan and thanked them for their helpful and gracious attention to our needs.

The Secretary was asked to write the Council and thank them for both their thoughtful consideration of our Jane Todd Crawford question, and their very gracious consideration in raising our operation allowance.

There being no other business, the meeting was adjourned.

MRS. J. R. HORN, JR., *Recording Secretary*

Minutes of the General Session

The Thirty-First Annual Convention of the Woman's Auxiliary to the Southern Medical Association, meeting in the Jade Room of the Rice Hotel, was called to order at 9 a.m., Tuesday, November 15, 1955 with Mrs. Louis K. Hundley of Pine Bluff, Arkansas, presiding. The meeting opened with the invocation by the Reverend Clyde J. Verheyden.

The Convention was then greeted by Mrs. Hundley, Dr. James E. Pittman, President of Harris County Medical Society, Dr. Denton Kerr, General Convention Chairman; Dr. R. L. Sanders, President of the Southern Medical Association, and by Dr. Milford O. Rouse, Chairman of the Council of the Southern Medical Association.

Mrs. Joseph H. McCracken, Jr., of Dallas, President of the Woman's Auxiliary to the Texas Medical Association, then gave us a very gracious welcome to which Mrs. Leo Smith of Waycross, Georgia, responded.

The pages, Mrs. Hugh F. Arnold and Mrs. Ray M. Morgan, were then introduced by Mrs. J. G. Heard, the local chairman.

The Secretary then called the roll which showed nine officers, seven committee chairmen, eleven councilors or those representing councilors, and ten past presidents attending.

A motion by Mrs. E. H. Marek was carried that the minutes, having been published in the SOUTHERN MEDICAL JOURNAL and available to members, should not be read at this time.

Mrs. Cosgrove, Corresponding Secretary, read messages from the absent members which stated reasons for their not attending the Convention.

The President appointed the following committees: *Auditing*, Mrs. W. G. Thuss, Chairman; Mrs. W. A. Garrott, Mrs. O. W. Binkley; *Reading*, Mrs. Pinson Neal, Chairman; Mrs. J. P. Culpepper, Jr., Mrs. Olin S. Cofer, Mrs. W. P. Stoner; *Budget*, Mrs. R. T. Travis, Acting Chairman; Mrs. J. G. Daves, Mrs. George W. Oiven, Mrs. S. J. Sullivant; *Doctor's Day*, Mrs. Shelley Davis, Chairman; Mrs. C. R. May, Jr., Mrs. Roy A. Douglass, Mrs. M. C. Wiginton, Mrs. F. A. Holden; *Courtesy Resolution*, Mrs. E. L. Posey, Chairman; Mrs. R. C. Dickinson, Mrs. E. P. Melver, Mrs. Milford O. Rouse, and Mrs. Edwin R. Guidry.

Mrs. Otis Flynt made a motion which carried, that the printed program be accepted and Mrs. J. H. McCracken moved that we dispense with reading rules of order as they were printed in the program. This motion was also accepted.

A very impressive memorial was given by Mrs. William H. Anderson, Memorial Chairman, of Booneville, Mississippi, and Mrs. F. G. Eidman, Soloist, of Houston. (Names of deceased attached to minutes.)

Mrs. Louis K. Hundley reported on her year's work, thanking the convention for their confidence and cooperation. (Complete report attached to minutes.)

The Treasurer, Mrs. Maynard Imlaw, read her report and the Chairman of the Auditing Committee stated that they had examined the books of the Treasurer and found them in perfect order. Mrs. C. E. Kitchens moved the acceptance of both the Treasurer's and Auditor's report which was accepted.

Mrs. Hundley presented the Vice-Presidents who introduced the Councilors and instructed them to give short reports on their year's work.

The Secretary then read recommendations from the Executive Board which stated:

> "The Executive Board of the Woman's Auxiliary to the Southern Medical Association met in a pre-convention session on Monday, November 14, and submits the following recommendations to the general body:
>
> (1) That the solicitation of funds for the Jane Todd Crawford Memorial Student Loan Fund be discontinued;
>
> (2) That the Auxiliary accept the suggestion of the Council of the Southern Medical Association to use the accumulated monies to match Southern Medical Association Funds to purchase memorial subscriptions to the JOURNAL OF THE SOUTHERN MEDICAL ASSOCIATION for residents in Gynecology in Southern hospitals, and to have a brochure printed to send to these residents explaining the Jane Todd Crawford Fund, exact details to be worked out by a joint committee."

These were voted on and accepted.

The budget report was read by Mrs. R. T. Travis after a motion made by Mrs. C. E. Kitchens was passed by the Convention.

Mrs. John Chenault then read a revision to the Constitution which was accepted.

Mrs. Head, Chairman of the Convention, gave the registration report of ten officers, thirteen chairmen, seventeen councilors, and a total registration of five hundred seventy-four.

Mrs. Hundley then asked for us to register our approval or disapproval of a one-meeting convention, after which the report was given of the Courtesy Resolutions by Mrs. E. L. Posey, Jr.

The following report of the nominating committee was given by Mrs. Stanley Hill, Chairman:

President-Elect	Mrs. O. W. Robinson 1920 Clarksville Street Paris, Texas
First Vice-President	Mrs. George Owen 627 Mohawk Street Jackson, Mississippi
Second Vice-President	Mrs. Ross P. Daniel 531 Woodlawn Avenue Beckley, West Virginia
Third Vice-President	Mrs. W. G. Thuss 2837 Southwood Road Birmingham 9, Alabama
Treasurer	Mrs. Park Niceley R. F. D. 15 Wisegarber Road Knoxville, Tennessee
Recording Secretary	Mrs. Shelley C. Davis 1259 Peachtree Battle Avenue, N.W. Atlanta, Georgia
Historian	Mrs. H. E. Christenberry 1642 Hillwood Drive Knoxville, Tennessee

There being no nominations from the floor, the nominees were duly elected.

The following nominating committee was elected for the coming year: from Board: Mrs. Louis K. Hundley, Mrs. Walker Curtis, and Mrs. Shelley Davis; from body: Mrs. W. W. Hubbard, Nashville, Tennessee; Mrs. R. C. Bellamy, Liberty, Texas. Mrs. John C. Perry moved the nominations closed. It was seconded and the Committee was elected by the Convention.

Mrs. R. P. Haynes, Past President, then installed the officers.

As time ran out, Mrs. Hundley announced that the presentation of the gavel and president's pin, the presentation of the past president's pin and Mrs. John J. O'Connell's inaugural address would take place at Doctor's Day Luncheon.

The meeting was then adjourned.

(Signed) MRS. J. R. HORN, JR., *Recording Secretary*

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President-Elect

Dr. J. P. Culpepper, Jr., 709 Arledge Street, Hattiesburg, Mississippi

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Second Vice-President

Dr. Denton Kerr, 1207 Hermann Professional Building, Houston 25, Texas

Advisor and Professional Relations Counselor

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Executive Secretary and Treasurer

Mr. V. O. Foster, Empire Building, Birmingham 3, Alabama

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Mr. Robert F. Butts, Empire Building, Birmingham 3, Alabama

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Dr. A. Clayton McCarty, *Vice-Chairman,* 1414 Heyburn Building, Louisville 2, Kentucky

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Dr. Fount Richardson, 316 West Dickson Street, Fayetteville, Arkansas

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Dr. Joseph S. Stewart, 803 duPont Building, Miami 32, Florida

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Dr. Grayson Carroll, 609 Humboldt Building, St. Louis 3, Missouri

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Dr. Donald S. Daniel, Johnston-Willis Hospital, Richmond 21, Virginia

Dr. V. Eugene Holcombe, Suite 214, Medical Arts Building, Charleston, West Virginia

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Dr. Walter C. Jones, (1959), 550 Brickell Avenue, Miami 32, Florida

Dr. Alphonse McMahon, (1960), 816 Missouri Theatre Building, St. Louis 3, Missouri

Dr. R. L. Sanders, (1961), 899 Madison Avenue, Memphis 3, Tennessee

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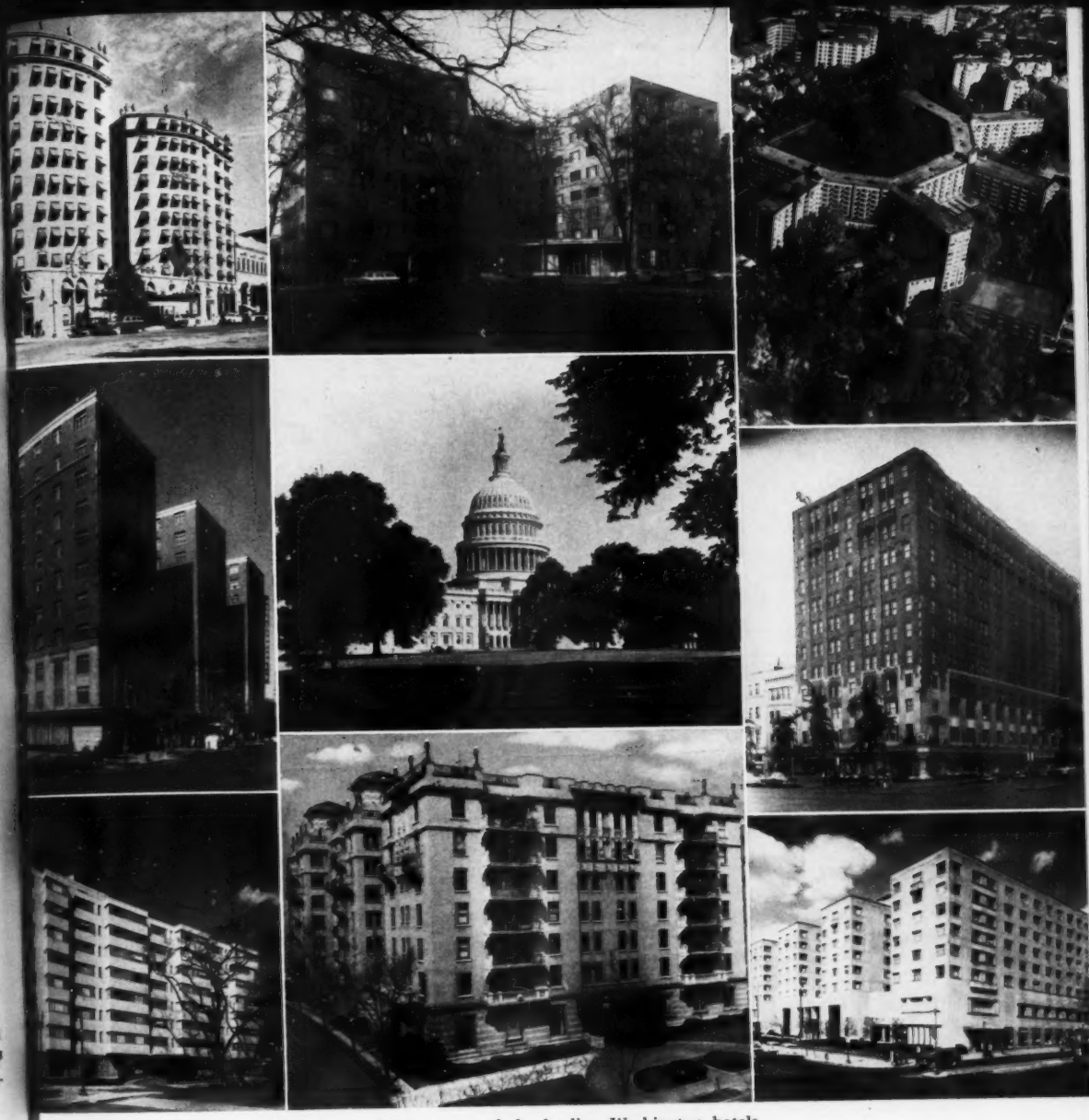
*New Officer—Elected Houston Meeting, 1955



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Southern Medical Association

GOLDEN ANNIVERSARY MEETING

WASHINGTON, D. C.

November 12-15, 1956

Plan Now To Attend

(Over for Housing Application Form)

APPLICATION FOR HOTEL ACCOMMODATIONS

Southern Medical Association Meeting, Washington, November 12, 13, 14 and 15, 1956

A Housing Bureau has been established for your convenience in making hotel reservations in Washington for the forthcoming meeting of the Southern Medical Association. Comparable room rates are listed. *Use the reservation blank below.* Please specify your first, second and third choice hotel. All requests for reservations should give: (1) anticipated date and hour of arrival; (2) date and approximate hour of departure; and (3) names and addresses of all persons who will occupy the accommodations. ALL RESERVATIONS SHOULD BE CLEARED THROUGH THE HOUSING BUREAU. Since all requests for rooms will be handled in chronological order, you should mail your application as early as possible. All reservations will be confirmed.

Hotel	Single	Double Bed	Twin Beds	Suite
AMBASSADOR	$ 5.50– 8.50	$ 8.00–11.00	$10.00–11.00	$14.00–19.00
DUPONT PLAZA	.....	.....	11.50–12.50	.....
LEE HOUSE	7.50–11.50	.....	11.00–15.00	.....
MANGER ANNAPOLIS	5.50– 8.50	.....	8.50–12.00	.....
MANGER HAMILTON	6.00– 8.50	.....	9.50–11.50	.....
MAYFLOWER	8.00–19.00	14.00–20.00	14.50–22.00	17.50–45.00
RALEIGH	7.00–10.00	.....	11.50–15.00	.....
ROGER SMITH	5.50– 8.00	.....	9.00–12.00	.....
SHERATON CARLTON	11.00–14.00	.....	15.00–18.00	.....
SHERATON PARK	6.50–10.50	.....	10.00–14.00	14.00 & Up
STATLER	7.00–17.50	11.50–15.50	14.50–20.50	.....
HOTEL 2400	6.00– 8.00	.....	8.00–12.00	16.00
WINDSOR PARK	.....	.....	8.50–12.50	14.00–20.00

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Please reserve the following accommodations for me for the Southern Medical Association Meeting:

Hotel Preference	Kind of Accommodations Desired
1st Choice	.....Single room at $.....to $.....
2nd Choice	.....Double room at $.....to $.....
3rd Choice	.....Twin bedroom at $.....to $.....
	.....Other type.....
Arrival Date	.....hour.....a.m.....p.m.
Departure Date	.....hour.....a.m.....p.m.

THE NAME OF EACH HOTEL GUEST MUST BE LISTED. Include the names of all persons for whom you are requesting reservations and who will occupy the room (s):

Name of Occupant (s)	Address
.....	.....
.....	.....
.....	.....

Individual Requesting Reservations

Name.....

Address.....

City.....State.....

If the hotels of your choice are unable to accept your reservation, the Housing Bureau will make as good a reservation as possible elsewhere.

SOUTHERN MEDICAL NEWS

Continued from page 409

sociation. Dr. Walter J. Glenn, Jr., Fort Lauderdale, was named president-elect. The other officers include Dr. Russell R. Hippensteel, Hollywood, vice-president; Dr. Anthony C. Galluccio, Hollywood, secretary; and Dr. Richard L. Foster, Fort Lauderdale, treasurer.

The Columbia County Medical Society has chosen Dr. Thomas H. Bates, Lake City, president for the new year. Dr. Robert M. Sasso, Lake City, will serve as vice-president. Dr. Clifton G. York, also of Lake City, has assumed the duties of secretary-treasurer.

The DeSoto-Hardee-Highlands-Glades County Medical Society has named the following new officers: Dr. Merle C. Kayton, president, Dr. Miles A. Collier, vice-president, and Dr. Roland W. Banks, secretary-treasurer. All are from Wauchula.

Dr. Joseph J. Lowenthal has been installed as president of the Duval County Medical Society. Also elected were Dr. Leo M. Wachtel, Jr., president-elect; Dr. James C. Lanier, vice-president; Dr. Charles F. McCrory, secretary; and Dr. Sidney Stillman, treasurer. Dr. G. Dekle Taylor has succeeded Dr. Lanier as chaplain.

Dr. Gretchen V. Squires, Pensacola, has assumed the duties of president of the Escambia County Medical Society. The other officers, also from Pensacola, are Dr. Paul F. Baranco, president-elect; Dr. J. Melvin Young, vice-president; and Dr. Pascal G. Baston, Jr., secretary-treasurer.

The Franklin-Gulf County Medical Society has installed the following officers for 1956: Dr. Harold B. Canning, Wewahitchka, president; Dr. John W. Hendrix, Port St. Joe, vice-president; and Dr. Photis J. Nichols, Apalachicola, secretary-treasurer.

Dr. James N. Patterson, Tampa, is now serving as president of the Hillsborough County Medical Association. Dr. Frank C. Metzger, Tampa, is the new president-elect. The other officers are Dr. Madison R. Pope, Plant City, vice-president; Dr. James A. Winslow, Jr., Tampa, secretary; and Dr. Curtis G. Rorebeck, Tampa, treasurer.

Dr. Richard H. Schulz, Marianna, was elected president of the Jackson-Calhoun County Medical Society. Dr. William W. Richardson, Graceville, will serve as vice-president. Dr. Francis M. Watson, Marianna, was re-elected secretary-treasurer.

The Lake County Medical Society has elected officers for 1956. They are: Dr. Geoffrey H. Binneveld, Leesburg, president; Dr. Rabun H. Williams, Eustis, vice-president; and Dr. J. Basil Hall, Tavares, secretary-treasurer.

New officers, all of Ft. Myers, of the Lee-Charlotte-Collier-Hendry County Medical Society are Dr. Joseph L. Selden, Jr., president; Dr. James L. Bradley, vice-president; and Dr. George D. Hopkins, II, secretary-treasurer.

Dr. Robert H. Mickler, Tallahassee, has been named president of the Leon-Gadsden-Liberty-Wakulla-Jefferson County Medical Society. Drs. George S. Palmer and Odis G. Kendrick, Jr., both of Tallahassee, will serve as vice-president and secretary-treasurer respectively.

Dr. William J. McGovern, Ocala, has been elected president of the Marion County Medical Society. Others elected are Dr. John D. Lindner, vice-president, and Dr. Robert L. Gibson, secretary-treasurer. Both are from Ocala.

The Manatee County Medical Society has selected the following new officers: Dr. Richard V. Meaney, president; Dr. Frederic H. Wood, vice-president; and Dr. Eugene E. Biel, secretary. The officers are all from Bradenton.

Dr. David G. Humphreys will serve as president of the Nassau County Medical Society. Dr. Benjamin F. Dickens is the vice-president and Dr. John W. McClane is secretary-treasurer. The officers, all from Fernandina Beach, were re-elected for the 1956 term.

New officers of the Orange County Medical Society are Dr. Thomas C. Butt, Orlando, president; Dr. Frank J. Pyle, also of Orlando, president-elect; and Dr. George R. Crisler, Winter Park, vice-president. Re-elected were Dr. W. Ansell Derrick, secretary, and Dr. Thomas R. Collins, treasurer. Both are from Orlando.

Dr. Walter R. Newbern, West Palm Beach, has assumed the duties of president of the Palm Beach County Medical Society. Dr. Edward W. Wood, Lake Worth, succeeds Dr. Newbern as president-elect. The other officers, all from West Palm Beach, are Dr. James R. Anderson, vice-president; Dr. Horace D. Atkinson, secretary, and Dr. Russell D. D. Hoover, treasurer.

Dr. Gail M. Osterhout, Inverness, will serve as president of the Pasco-Hernando-Citrus County Medical Society for the new term. Dr. S. Carnes Harvard, Brooksville, and Dr. John S. Williams, Dade City, were elected vice-presidents. Dr. W. Wardlaw Jones, Dade City, has been re-elected secretary-treasurer.

The Pinellas County Mdical Society has installed Dr. Percy H. Guinand, Clearwater, as president. The new vice-presidents, both of St. Petersburg, are Dr. Harry R. Cushman and Dr. Edward L. Cole, Jr. Dr. Whitman C. McConnell, St. Petersburg, was re-elected secretary-treasurer.

Dr. James T. Shelden, Lakeland, has succeeded Dr. Samuel J. Clark as president of the Polk County Medical Association. Dr. Marion W. Hester, Lakeland, has been re-elected secretary-treasurer.

New officers of the St. Lucie-Okeechobee-Martin County Medical Society are Dr. Alfred J. Cornille, Fort Pierce, president, and Dr. John M. Gunsolus, Stuart, vice-president. Dr. Adrian M. Sample, Fort Pierce, was re-elected secretary.

Dr. Reuben J. Plant, Jr., has been named president of the St. Johns County Medical Society. Dr. Milton Segal will serve as vice-president; Dr. Roy E. Campbell, secretary, and Dr. Richard J. Langston, treasurer. All the officers are from St. Augustine.

The Sarasota County Medical Society has installed the following new officers, all from Sarasota: Dr. Eugene D. Liddy, Jr., president, Dr. Karl R. Rolls, secretary, and Dr. Millard B. White, treasurer.

Dr. William V. Roberts was named president of the Seminole County Medical Society. Dr. Gordon D. Stanley will serve as vice-president. Dr. Terry Bird was re-elected secretary. All the officers are from Sanford.

The officers for the 1956 term of the Volusia County Medical Society are: Dr. Theodore F. Hahn, Jr., DeLand, president; Dr. Lawrence M. Hughes, New Smyrna Beach, vice-president; and Dr. Achille A. Monaco, Daytona Beach, secretary-treasurer.

Dr. Meredith F. Campbell, Dade County, has accepted the editorship for the United States of *Urologia Internationalis*.

Dr. A. R. Hollender, Miami Beach, has been elected president of the Greater Miami Eye, Ear, Nose and Throat Society. Dr. Curtis Benton, Fort Lauderdale, will serve as vice-president, and Dr. James H. Mendel, Jr., Miami, will assume the duties of secretary-treasurer.

Dr. John H. Hicks, Dade County, has been certified as a Diplomate by the American Board of Dermatology and Syphilology.

The Medical Advisory Board of the Cancer Institute at Miami has re-elected Dr. Homer L. Pearson chairman of the board. Newly elected board members are Drs. Ralph Jack and Judd R. Breakstone.

Dr. Raymond E. Parks, Miami, has been elected president of the Greater Miami Radiological Society. Dr. Richard D. Shapiro, Miami Beach, will serve as vice-president, and Dr. Andre S. Capi, Hollywood, is the new secretary-treasurer.

GEORGIA

Dr. Fincher C. Powell has been elected president of the DeKalb County Medical Society. Dr. John T. Leslie will serve as vice-president. Dr. William K. Kerr has been re-elected secretary-treasurer. Delegates to the Medical Association of Georgia will be Drs. W. A. Mendenhall and Freeman Simmons.

Dr. N. A. Thornton has been named an associate of the American College of Physicians.

Dr. Samuel R. Poliakoff has been made a Fellow in the American Academy of Obstetrics and Gynecology.

The new appointments to the faculty of the Emory University School of Medicine include Dr. C. Raymond Arp and Dr. Byron F. Harper, Jr. Dr. Paul L. Reith is a new professor of anatomy.

Dr. J. L. Jennings, Fulton County, has been elected president of the American Business Club.

Dr. Robert F. Mabon has been named president of the Atlanta Society of Neurology and Psychiatry. Dr. W. H. Kiser, Jr., will serve as vice-president and Dr. Donald S. Bickers will be the new secretary-treasurer.

Dr. Alfred Agrin has been informed by the American Academy of Psychosomatic Medicine that he is qualified to practice psychosomatic medicine.

Dr. Sanford J. Matthews has been appointed associate medical director of the Henrietta Egleston Hospital for Children.

Dr. Ralph O. Bowden, Savannah, has been elected president of the medical staff at Telfair Hospital.

Dr. Milton F. Bryant, Jr., Atlanta, has been named an instructor in surgery of Emory University School of Medicine.

Dr. Waldo E. Floyd, Statesboro, has been appointed Director of the Board of American Family Life Insurance Company.

Dr. William G. Hamm, Atlanta, has been promoted to rear admiral in the U. S. Naval Reserve.

The national Board of Directors of the American Cancer Society has named Dr. J. Elliott Scarborough, Atlanta, to membership on the board.

Dr. Howard J. Williams, Macon, has been elected to fellowship in the American Academy of Pediatrics.

Dr. Bill Purcell, Calhoun, has succeeded Dr. J. E. Billings as chief-of-staff of the Gordon County Hospital. Dr. Lewis Lang will serve as assistant chief-of-staff and Dr. Gordon Jackson as secretary.

Dr. Harlan M. Starr, Rome, has been named a Fellow of the American Academy of Pediatrics.

The South Atlantic District of the Pan American Medical Women's Alliance has appointed Dr. Vilda Shuman, Waycross, chairman.

Dr. Tom Stapleton, Pearson, has assumed the duties as head of the new Pearson City Medical Clinic.

Dr. Joseph Robert Chastain, Buford, has succeeded Dr. H. H. Lancaster as the new medical director at Pacolet Mill No. 4, New Holland. Dr. Lancaster has accepted the appointment as medical officer and commissioner of Hall County Health Department.

Dr. Phyllis J. O'Neal, Elberton, is the first woman to serve as president of the Elbert County Medical Society. The other officers elected to serve with Dr. O'Neal are Dr. A. S. Johnson, Jr., president-elect, and Dr. Carey A. Mickel, Jr., secretary-treasurer. Dr. Fletcher Smith was again appointed censor. Dr. D. V. Bailey was selected for a two year term as censor, and Dr. D. N. Thompson for a three year term.

Dr. H. Wilder Smith, Swainsboro, has been elected president of the Emanuel County Medical Society. Dr. Smith is also chief-of-staff of the Emanuel County Hospital.

The Fulton County Medical Society has installed the following officers for 1956: Dr. McLaren Johnson, president; Dr. Don F. Cathcart, president-elect; and Dr. Edgar Boling, vice-president.

Dr. Ruskin King, Savannah, has been elected president of the Georgia Medical Society. The other new officers are Dr. Walter E. Brown, president-elect; Dr. William H. Fulmer, vice-president; Dr. W. W. Osborne, secretary; and Dr. Ralph O. Bowden, treasurer.

Dr. Mack Simmons, St. Simons Island, has succeeded Dr. Robert S. Burford as president of the Glynn County Medical Society. Dr. John Hightower, Brunswick, was named vice-president; Dr. James M. Hicks, Brunswick, has been re-elected secretary-treasurer; and Dr. Frank B. Mitchell, Brunswick, was elected assistant secretary.

The Hall County Medical Society has installed Dr. B. A. McCrum, Gainesville, as president. Dr. Martin Smith will serve as vice-president and Dr. Hamil Murray will assume the duties of secretary-treasurer.

The Tift County Medical Society has elected the following officers for 1956: Dr. Tom Edmondson, president, Dr. R. E. Jones, vice-president, and Dr. Paul Lucas, secretary and treasurer.

Dr. Ralph E. Wenzel, Social Circle, has been named president of the Walton County Medical Society. Dr.

Homer Head, Monroe, is the new vice-president and Dr. Ernest Thompson, Monroe, has been re-elected secretary.

Dr. John L. Elliott, Savannah, has succeeded Dr. Ralph O. Bowden as president of the Physicians Service Association of Savannah. The new directors appointed include Drs. Robert B. Gottshalk, L. M. Friedman, William H. Lippitt, and John Sharpley.

Dr. C. R. A. Redmond, Savannah, has been chosen president of the medical staff of Warren A. Candler Hospital for 1956. Dr. David Robinson was named vice-president, and Dr. Fenwick T. Nichols, Jr., secretary-treasurer. The following Savannah physicians have been elected heads of the various departments: Dr. John L. Elliott, medicine; Dr. Oscar H. Lott, surgery; Dr. Darnell L. Brawner, obstetrics and gynecology; and Dr. W. A. Cole, radiology.

Dr. John S. Inman, Jr., Albany, has been inducted into fellowship of the American Academy of Obstetrics and Gynecology.

Dr. Phil E. Roberson, Albany, has been re-elected chief of the medical staff of Phoebe Putney Memorial Hospital.

The staff of the Americus and Sumter County Hospital has elected the following new officers: Dr. Henry R. Fenn, Americus, president; Dr. Frank A. Wilson, III, vice-president; and Dr. W. R. Anderson, secretary.

Dr. Daniel E. Nathan, Ft. Valley, a flight surgeon and general surgeon in the U.S.A.F. Reserve, has been awarded a commendation ribbon for meritorious service as general surgeon with the 2795th U.S.A.F. Hospital at Warner Robins Air Force Base from 1953 through 1955.

Dr. Virgil B. Williams, Griffin, has been appointed to the State Board of Health. He will serve until September 1, 1961.

Drs. Fincher C. Powell and Chester W. Morse, Decatur, have been named to the medical branch of the Metropolitan Atlanta Area Civil Defense unit.

Dr. Ivan B. Ross, Atlanta, was appointed pathologist and laboratory director of the Griffin-Spalding County Hospital.

The executive committee and staff of the Parkview Hospital has selected Dr. A. M. Phillips, Macon, as president and Dr. Joseph W. Daniel, Jr., as secretary for 1956.

Dr. E. Y. Walker, Milledgeville, has been named a Fellow of the American Academy of Obstetrics and Gynecology.

The Rome and Floyd County Y.M.C.A. has elected Dr. Tom Harbin, Rome, president.

Dr. James H. Jenkins, Rome, has become a member of the staff of the Harbin Clinic as a specialist in obstetrics and gynecology.

Dr. Virginia Hamilton Maley, formerly of Gainesville, has been appointed commissioner of health for Bartow, Gordon, and Cherokee counties.

The local Jaycees have named Dr. Erwin R. Jennings, Brunswick, Man of the Year for 1955.

Dr. Alton M. Johnson, Valdosta, has been elected president of the staff of Pineview General Hospital. Dr. R. K. Winston is vice-president, and Dr. F. G. Eldridge is secretary.

Dr. John O. House, Gainesville, has accepted a position as director of anesthesiology at the Hall County Hospital.

Dr. Robert B. Greenblatt, Augusta, is the recipient of the Phi Lambda Kappa Scientific Award. The national Jewish medical fraternity cited Dr. Greenblatt for his scholarship, research and scientific literature concerning the endocrine glands.

KENTUCKY

The head of the department of pediatrics, University of Louisville, has announced the following appointments: Dr. Joseph A. Little, physician-in-chief for the Children's Hospital Division of the department; Dr. William Curtis Adams, pediatric service director for the Louisville General Hospital division; Dr. Mary O. Cruise, director of Well Baby Clinics; and Dr. Frank Falkner, director of the Longitudinal Growth Study. Dr. Little is an associate professor in the department; Drs. Adams, Cruise and Falkner are assistant professors.

Dr. Bruce Underwood, secretary and general manager of the Kentucky State Medical Association, has resigned to take a position with the Department of Health, Education and Welfare in Washington. Dr. Woodford B. Troutman, Louisville, has assumed the duties of secretary-editor pro tem of the association.

Dr. Alex J. Steigman, chairman of the department of pediatrics, University of Louisville, has been appointed Special Consultant to the Communicable Disease Center of the Public Health Service, Department of Health, Education and Welfare.

Dr. William S. Reeves, Hillsboro, has been honored at "Dr. Reeves' Day" by the citizens of Fleming County. Dr. Reeves has spent 44 of his 64 years of practice in this county.

LOUISIANA

Dr. Arthur Nesbit Houston has been installed as the sixty-ninth president of the Orleans Parish Medical Society.

Dr. Grace A. Goldsmith, professor of medicine in the Tulane University School of Medicine, has been named a Fellow in the New York Academy of Sciences and appointed vice-chairman of the food and nutrition board of the National Research Council.

Dr. George E. Burch, professor and head of the department of medicine at Tulane University School of Medicine, was appointed associate editor of the *American Heart Journal*. Dr. Burch has also been elected a member of the American Board of Internal Medicine.

An oil portrait of the late Dr. Samuel M. D. Clark, former professor of gynecology and clinical obstetrics in the Tulane University School of Medicine, was presented to the university. Dr. Clark served as a member of the Tulane faculty from 1904 until his death in 1925.

Dr. Adolph Jacobs, gynecologist and obstetrician-in-charge, Independent Unit, Charity Hospital, has succeeded Dr. E. J. Richard as head of the Unit.

Dr. Lyon K. Loomis has been named chief of Orthopedics, Independent Unit at Charity Hospital.

The Woman's Home Companion magazine recently named Dr. Emma Moss one of "The Six Most Successful Women of 1955."

Dr. John Tanner has been installed as secretary-treasurer of the Second District, Louisiana State Medical Society.

Drs. Herman R. Cohen, Aynaud M. Hebert, George E. McCaskey, Jr., Earl Conway Smith, and Celeste G. Wichser, all of New Orleans, have been named Fellows in The Academy of Obstetrics and Gynecology.

Dr. Horace B. Dozier has succeeded Dr. Carl Granberry as president of the medical staff of the Eye, Ear, Nose and Throat hospital. Other officers elected were: Dr. Harold Tabb, first vice-president; Dr. Irwin Goldman, second vice-president; and Dr. Wallace Rubin, secretary-treasurer.

Dr. Spencer B. McNair has assumed his duties as president of the medical staff of Hotel Dieu. Dr. Robert Gillaspie is the new vice-president and president-elect, and Dr. John L. Kron is secretary-treasurer.

Dr. Bruno F. Mancuso has succeeded Dr. N. J. Tessitore as president of the medical staff of Mercy Hospital. The other officers are: Dr. John E. Garcia, vice-president; Dr. Sewall Kepner, treasurer; Dr. Nicholas J. Chetta, secretary; and Dr. C. F. Bellone, board member.

The medical staff of DePaul Hospital has elected Dr. Max E. Johnson president, Dr. Louis J. Dubos, vice-president, and Dr. David A. Freedman, secretary-treasurer.

Among the new officers of the New Orleans Dental Association are two members of the Orleans Parish Medical Society: Dr. Joseph P. Seelig, second vice-president and Dr. Joseph O. Kuebel, Jr., secretary.

Dr. Hiram O. Barker, former administrator and chief of radiology at Baptist Hospital, Alexandria, has been honored by the board of administrators of the hospital. Dr. Barker was awarded a plaque in appreciation of his 26 years of service at the hospital.

MARYLAND

Dr. James Magraw, Perryville, has been named an emeritus member of the Cecil County Medical Society.

The Frederick County Medical Society has elected the following officers: Dr. Norvell Belt, president; Dr. James B. Thomas, first vice-president; Dr. Jesse Fifer, second vice-president; Dr. A. M. Powell, secretary; Dr. John Culler, treasurer; Dr. Thomas Quill, censor; Dr. L. R. Schoolman, delegate; and Dr. Henry Chase, alternate.

Dr. William B. Hagan, Mount Rainier, has been elected president of the Prince Georges County Medical Society. The other officers are: Dr. Hans Wodak, Greenbelt, vice-president; Dr. John Kehoe, Cheverly, corresponding secretary; Dr. Lloyd Hughes, College Park, recording secretary; and Dr. Frederick E. Musser, Hyattsville, treasurer.

MISSISSIPPI

Six Mississippi State Medical Association members were appointed to the board of directors of the University of Mississippi Alumni Association. They are Drs. Lamar Bailey, Kosciusko; Ashford H. Little, Oxford; A. A. Aden, Indianola; James G. Thompson, Jackson; Walter D. Gunn, Quitman, and B. B. O'Mara, Biloxi.

Mississippi State Medical Association officers, Dr. Lamar Bailey, president, Dr. H. C. Ricks, president-elect, Dr. George E. Twente, secretary, and Dr. J. P. Culpepper, Jr., senior AMA Delegate, represented Mississippi at the 52nd Annual Congress on Medical Education and Licensure.

MISSOURI

Dr. John N. Martin, Chillicothe, has been named president of the hospital medical staff at Chillicothe.

The Greater Kansas City Society of Internists has recently been formed. Dr. Hubert Parker was elected president. The other officers are Dr. James Jarvis, president-elect, Dr. Warren F. Wilhelm, secretary, and Dr. William Mundy, treasurer.

Dr. Eugene H. Hamilton, Joplin, has been elected president of the staff of St. John's Hospital.

Dr. C. Edgar Virden, Kansas City, has been named president-elect of the Radiological Society of North America.

Dr. Hugh Mathewson, Kansas City, has been appointed to membership on the program committee of the American Society of Anesthesiology.

Dr. Hugh W. Maxey, Jefferson City, has been named resident physician at the Missouri Penitentiary.

Dr. Carl Rice, Hillsboro, has been awarded a plaque in recognition of work in the poliomyelitis vaccine program in Jefferson County.

New officers of the St. Mary's Hospital staff, Jefferson City, are Dr. Everett D. Sugarbaker, president, Dr. August P. Stephan, vice-president, and Dr. B. E. Watts, secretary-treasurer.

Dr. A. N. Arneson, St. Louis, is the newly elected chairman in Missouri of the American Academy of Obstetrics and Gynecology. Dr. Clarence D. Davis, Columbia, is vice-chairman.

Dr. George E. Fisher was elected chief-of-staff of the Louise G. Wallace Memorial Hospital in Lebanon. Dr. George R. Weeks was named secretary.

Dr. Robert E. Britt has been elected president of the medical staff of St. Vincent's Hospital, St. Louis. Dr. Robert Brookes will serve as vice-president and Dr. George H. Lawrence as secretary.

The Audrain County Medical Society has elected the following new officers: Dr. Glenn Kallenbach, president; Dr. Harold Lankford, vice-president; Dr. Edgar S. Wallace, secretary-treasurer; and Dr. Ben Jolly, delegate to the Missouri State Medical Association.

Dr. Carter Luter, Butler, has been elected president of the West Central Missouri Medical Society. The new vice-president is Dr. Edward S. Jones, Harrisonville, and the secretary is Dr. Louis P. McCann.

Dr. J. N. Wiles, West Plains, has assumed the duties of president of the South Central Counties Medical Society. Dr. A. T. Walker was elected president-elect and Dr. A. C. Ames was re-elected secretary-treasurer.

Dr. Leonard T. Furlow, associate professor of clinical neurological surgery, has been named president-elect of the St. Louis Medical Society.

Dr. Margaret G. Smith, associate professor of pathology, has been elected president of the Washington University Medical Society. The other officers are: vice-president, Dr. Robert E. Shank, professor of preventive medicine in the department of medicine and head of the department of preventive medicine and public health, and secretary, Dr. Carl G. Harford, associate professor of medicine.

Dr. Robert B. Dodd, professor and head of the department of anesthesiology at the University of Maryland School of Medicine, has been appointed the Henry E. Mallinckrodt professor of anesthesiology at the Washington University School of Medicine. Dr. Dodd is the first to be named to this professorship recently endowed by Edward Mallinckrodt, Jr., in memory of his son.

Dr. George J. Fuchs, Jr., St. Louis, has been appointed assistant professor of obstetrics and gynecology at the University of Missouri School of Medicine, effective August 1, 1956.

Dr. Ercell Leon Miller, Columbia, has assumed his new duties as clinical associate in surgery (dentistry).

The staff of St. John's Hospital, St. Louis, has named Dr. William F. Kistner, senior instructor in internal medicine, St. Louis University School of Medicine, to the position of director of education, department of internal medicine. Dr. John G. Leahy, Tiffin, Ohio, has been appointed director of education, department of surgery. Each physician will maintain his private practice.

NORTH CAROLINA

Dr. Sam Way has been elected president of the Edgecombe-Nash Medical Society. Other new officers are: Dr. J. C. Brantley, Jr., first vice-president; Dr. R. D. Kornegay, second vice-president; Dr. J. S. Brock, secretary-treasurer; and Dr. R. M. Whitley, editor of the *Bulletin*.

Drs. John O. Lafferty, Charlotte, and Ernest H. Wood, Chapel Hill, have been elected Fellows in the American College of Radiology.

Dr. Millard D. Hill, Raleigh, vice-president of the American Medical Association, has been elected president of the Raleigh Academy of Medicine. The other officers are Dr. Roscoe D. McMillan, Red Springs, president-elect; Dr. Isaac C. Wright, Raleigh, secretary; and Dr. Robert Williams, Raleigh, treasurer.

Dr. John C. Burwell, Jr., Greensboro, has been elected president of the South Atlantic Association of Obstetricians and Gynecologists. Dr. C. Hampton Mauzy, Winston-Salem, will serve as secretary-treasurer.

OKLAHOMA

Dr. Kenneth Andrews has become a member of the staff of Northside Medical and Dental Clinic in Oklahoma City.

Dr. Frank H. McGregor, Tulsa, has been appointed Tulsa county physician.

The American Board of Pediatrics has certified Dr. Robert E. Herndon, Chickasha.

Dr. Emry G. Hyatt, Tulsa, has become the new chief-of-staff of St. John's Hospital.

Dr. Albert H. Krause, chief of surgical service at the Veterans Administration Hospital in Muskogee, has received an award for his leadership in training young surgeons at the hospital.

Dr. John R. Danstrom, Oklahoma City, has been named a Fellow in the American College of Radiology.

The American Academy of Obstetrics and Gynecology has inducted Drs. James B. Pitts, Jr., Oklahoma City, and Robert E. Dillman, Tulsa, into fellowship.

Dr. Peter E. Russo, Oklahoma City, has been elected second vice-president of the Radiological Society of North America.

Dr. C. S. Lewis, Jr., Tulsa, has been re-elected president of the Tulsa County Heart Association.

Dr. John Taylor Kilpatrick, son of Dr. G. A. Kilpatrick, Okmulgee, has been named a Diplomate of the American Board of Surgery.

Dr. George M. Brown, Jr., McAlester, is serving as surgical consultant and is performing specialized surgery at the Talihina Medical Center.

Dr. A. A. Stoll has retired as medical house physician at Oklahoma General Hospital, Clinton. Dr. Stoll has served at this hospital since 1938.

Dr. R. Q. Goodwin, president of the Oklahoma State Medical Association, has selected Dr. Malcom Phelps, El Reno, as chairman of a committee to study the operation of the United Mine Workers Health and Retirement Fund.

Dr. William Seeman, chief of the clinical psychology department of the Mayo Clinic, Rochester, Minnesota, since 1950, has been named to the newly created position of associate professor of medical psychology at the University of Oklahoma School of Medicine. Dr. Herbert H. Kent, chief, physical medicine and rehabilitation department, Veterans Administration Hospital in Indianapolis, has been appointed associate professor of physical medicine.

SOUTH CAROLINA

Dr. Dale Groom has been named a Fellow of the American College of Physicians.

The American Academy of Obstetrics and Gynecology has inducted the following into fellowship: Dr. James E. Bell, Jr., Sumter, Dr. Lawrence N. Bellew, Greenville, and Dr. Bruce Swain, Anderson.

Dr. William Hood has succeeded Dr. William Schulze as president of the Greenville General Hospital Medical Staff. Dr. Thomas Furman will serve as vice-president and Dr. William DeLoache as secretary.

The new officers of the staff of St. Francis Hospital, Greenville, are Dr. M. Gordon Howle, president, Dr. Sayge H. Anthony, vice-president, and Dr. Lawrence N. Bellew, secretary.

Dr. D. Herbert Smith has been named Spartanburg County's new Doctor of the Year. Dr. Smith has been practicing medicine for 46 years. He maintains offices both in Pauline and Spartanburg.

Dr. J. E. Lipscomb has been elected president-elect of the Greenville County Medical Society. The other officers are Dr. David P. Reese, vice-president, Dr. Tom Whitaker, secretary and Dr. A. Heide Davis, treasurer.

Dr. Carroll Bowie has succeeded Dr. Henry S. Jordan as president of the Anderson County Medical Society. Serving with Dr. Bowie are Dr. James C. Belk, vice-president; Dr. William Hunter, Clemson, secretary; and Dr. S. H. Huff, treasurer.

Dr. Louis G. Llewelyn has recently assumed his duties as medical director of the Springs Cotton Mills in Lancaster. Dr. Llewelyn had been engaged in private practice in Pocomoke City, Maryland.

The Florence City Council appointed Dr. Allen Eagerton to a five-year term on the city board of health. Dr. Julian M. Way will serve a one-year term. Dr. L. R. Dixon, Jr., has been re-appointed chairman.

Dr. W. T. Barron has been elected president of the Columbia Medical Society. The other new officers are Dr. Rudolph Farmer, vice-president; Dr. Harold Jer-

Continued on page 50

McDowell's Report of the First Successful Ovariotomy

"In December 1809, I was called to see a Mrs. Crawford, who had for several months thought herself pregnant. She was affected with pains similar to labor pains, from which she could find no relief. So strong was the presumption of her being in the last stage of pregnancy that two physicians, who were consulted on her case, requested my aid in delivering her. The abdomen was considerably enlarged and had the appearance of pregnancy, though the inclination of the tumor was to one side, admitting of an easy removal to the other. Upon examination, per vaginam, I found nothing in the uterus, which induced the conclusion that it must be an enlarged ovarium. Having never seen so large a substance extracted nor heard of an attempt or success attending any operation such as this required, I gave to the unhappy woman information of her dangerous situation. She appeared willing to undergo an experiment, which I promised to perform if she would come to Danville (the town where I live), a distance of sixty miles from her place of residence. This appeared almost impracticable by any, even the most favorable conveyance, though she performed the journey in a few days on horseback. With the assistance of my nephew and colleague, James McDowell, M.D., I commenced the operation, which was concluded as follows: Having placed her on a table of the ordinary height, on her back, and removed all her dressing which might in any way impede the operation, I made an incision about three inches from the musculus rectus abdominis, on the left side, continuing the same nine inches in length, parallel with the fibres of the above-named muscle, extending into the cavity of the abdomen, the parietes of which were a good deal contused, which we ascribed to the resting of the tumor on the horn of the saddle during her journey. The tumor then appeared full in view, but was so large that we could not take it away entire. We put a strong ligature around the Fallopian tube near the uterus, and then cut open the tumor, which was the ovarium and fimbrious part of the Fallopian tube very much enlarged. We took out fifteen pounds of a dirty, gelatinous-looking substance, after which we cut through the Fallopian tube and extracted the sack, which weighed seven pounds and one-half. As soon as the external opening was made the intestines rushed out upon the table, and so completely was the abdomen filled by the tumor that they could not be replaced during the operation, which was terminated in about twenty-five minutes. We then turned her upon her left side, so as to permit the blood to escape, after which we closed the external opening with the interrupted suture, leaving out, at the lower end of the incision, the ligature which surrounded the Fallopian tube. Between every two stitches we put a strip of adhesive plaster, which, by keeping the parts in contact, hastened the healing of the incision. We then applied the usual dressings, put her to bed, and prescribed a strict observance of the antiphlogistic regimen. In five days I visited her, and much to my astonishment found her engaged in making up her bed. I gave her particular caution for the future, and in twenty-five days she returned home as she came, in good health, which she continues to enjoy.

—From *The Eclectic Repertory*, 1817.

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References: **1. Pocock, D. G.: Personal communication. 2. Harding, C. W.: Personal communication. 3. Hollander, W. M.: Personal communication.**

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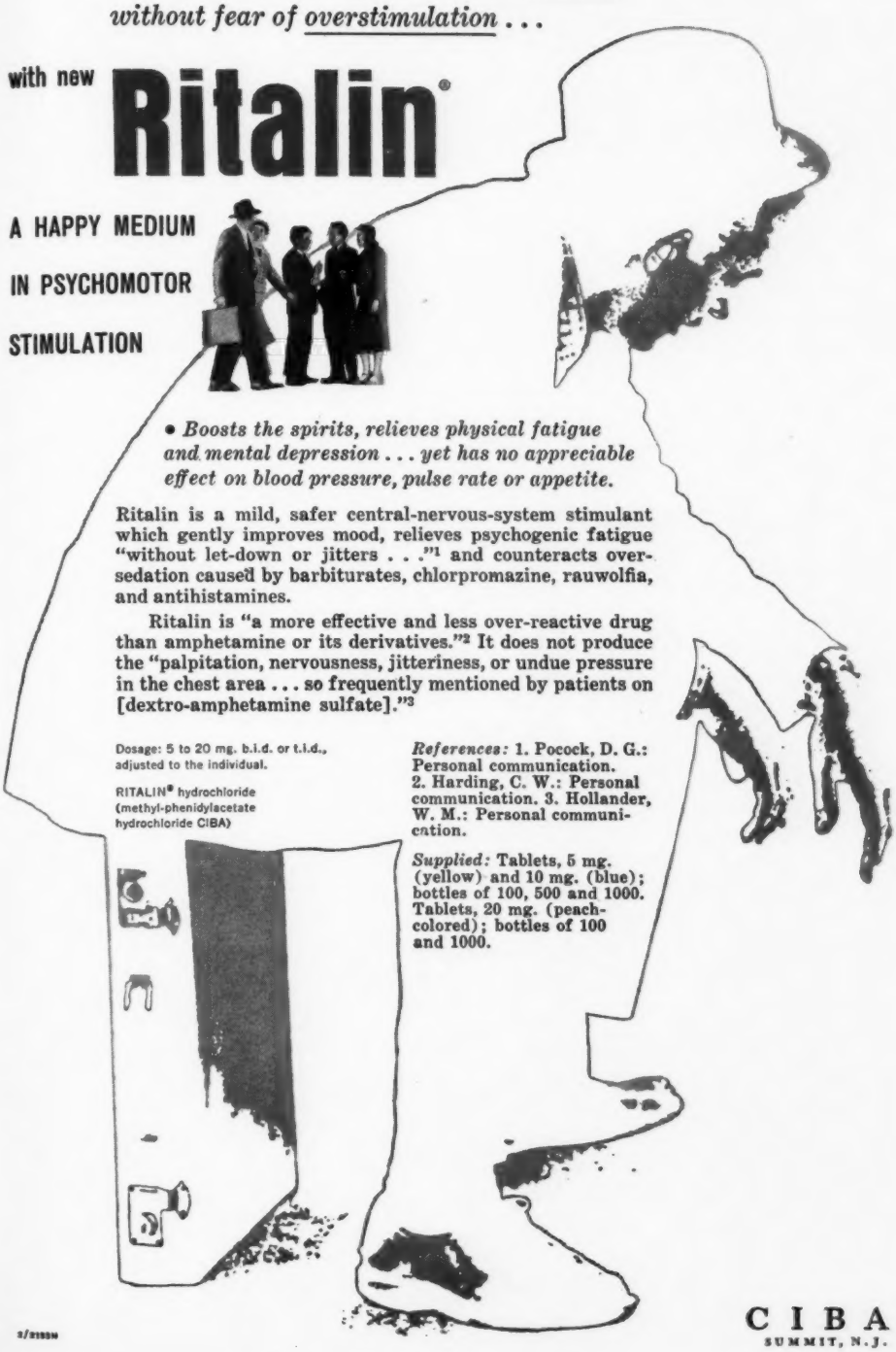

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Continued from page 436

vey, secretary; Dr. Charles Crews, treasurer; and Dr. Charles Holmes, editor of the society's publication.

The South Carolina Academy of General Practice has selected new officers, commission and committee chairmen. The officers are: Dr. H. W. Mead, Pendleton, president; Dr. C. N. Wyatt, Greenville, president-elect; Dr. G. P. Richards, Charleston, vice-president; Drs. G. W. Price and W. T. Hendrix, Spartanburg, board of directors; and Dr. H. M. Whitworth, Greenville, secretary-treasurer.

Dr. William A. Wallace has been elected president of the Spartanburg County Medical Society. Also elected were Dr. Robert Ralston, vice-president; Dr. John N. Miller, Jr., secretary; and Dr. Harwood Beebe, Jr., treasurer.

The new officers of the Newberry County Memorial Hospital's medical staff are Dr. E. Gordon Able, chief-of-staff; Dr. E. H. Moore, assistant chief-of-staff; Dr. Von A. Long, member-at-large; and Dr. J. Claude Sease, secretary-treasurer. Other new officers include: Dr. Ralph P. Baker, chief-of-surgery; Dr. Robert E. Livingston, chief, eye, ear, nose and throat; Dr. V. W. Rinehart, chief-of-medicine; Dr. C. A. Dufford, Jr., chief-of-pediatrics; Dr. Elbert J. Dickert, chief-of-obstetrics; and Dr. Foster N. Martin, chief-of-laboratory.

Dr. J. W. Bell, chairman of the Greenwood County Board of Health, has been appointed acting administrative director of the County Public Health Department until a new director is named.

Dr. James Y. Bryson has accepted an appointment as physician at Whitten Village. Until recently Dr. Bryson had been doing medical work at the DuPont H-Bomb plant near Aiken.

Dr. Julian P. Price, Florence, has been honored with the presentation of a silver cup on his retirement as dean of the Southern Pediatric Seminar.

The Pilot Club of Abbeville presented a bronze door plaque and a $500 check to the Abbeville County Memorial Hospital in honor of the late Drs. John Rayford Power and Eugene Logan Power. A room in the new wing of the hospital has been dedicated in honor of the late Abbeville physician brothers.

Dr. Manly E. Hutchinson, Columbia, has been named president-elect of the South Atlantic Association of Obstetricians and Gynecologists.

TENNESSEE

Dr. R. L. Sanders, immediate past president of the Southern Medical Association, addressed the Sixth District of the Academy of General Practice of the State of Louisiana, in Hammond, Louisiana.

Drs. Lewis P. Britt, R. Leon Bourland and James Brockman, all from Memphis, have been elected to offices in sections of the Southern Medical Association.

Dr. Claude Snoddy has been elected president of the Coffee County Medical Society. Dr. Howard Farrar will serve as vice-president and Dr. Ralph Brickell will assume the duties of secretary and treasurer.

Dr. E. Dale Allen, White Pine, has succeeded Dr.

Continued on page 59

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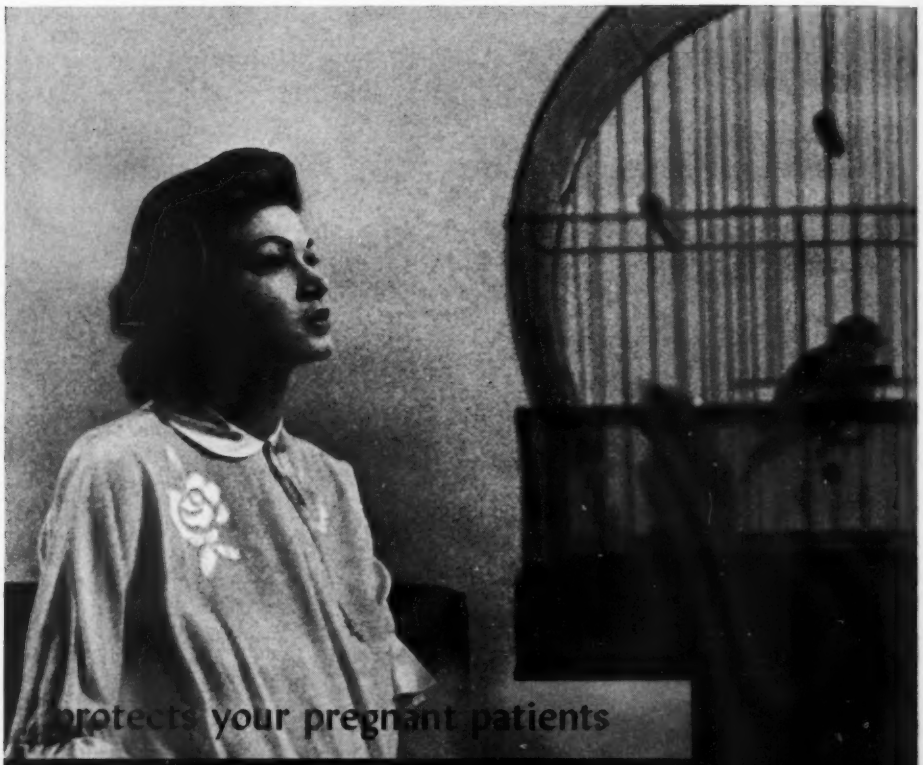

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(1) Crenshaw, J. E.: Am. J. Digest. Dis. 17: 387, 1950. (2) Eichman, S. S.: Diseases of the Liver, Gallbladder and Bile Ducts, ed. 3, Philadelphia, Lea & Febiger, 1953, vol. 2, p. 451. (3) Sherlock, S.: Diseases of the Liver and Biliary System, Springfield, Charles C. Thomas, 1955, p. 642. (4) King, J. C.: Am. J. Digest. Dis. 22: 102, 1955.

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Carrier cases—Usually the husband reinfects the wife unknowingly. Males harboring trichomonads may be free from symptoms.[5-8]

Protection for wives—To prevent reinfection Draper,[2] Bernstine and Rakoff,[4] Davis,[9] and Karnaky[10] advise use of the condom during coitus.

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References: 1. Donald, I.: Brit. M. J. 2:1223 (Dec. 6) 1952. 2. Draper, J. W.: Internat. Rec. Med. 168:563 (Sept.) 1955. 3. Karnaky, K. J.: Urol. & Cutan. Rev. 48:812 (Nov.) 1938. 4. Bernstine, J. B., and Rakoff, A. E.: Vaginal Infections, Infestations and Discharges, New York, The Blakiston Co., 1953. 5. Lanceley, F., and McEntegart, M. G.: Lancet 1:668 (Apr. 14) 1953. 6. Freed, C. F.: South African M. J. 22:223 (Mar. 27) 1948. 7. Lanceley, F.: Brit. J. Ven. Dis. 29:213 (Dec.) 1953. 8. Sorel, C.: Mod. Med. 21:166 (Apr. 1) 1953. 9. Davis, C. H.: West. J. Surg. 63:53 (Feb.) 1955. 10. Karnaky, K. J.: J.A.M.A. 155:876 (June 26) 1954. 11. Davis, C. H.: J.A.M.A. 157:126 (Jan. 8) 1955.

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1. J. Pharm. & Exp. Ther., 89:131
2. J. Urology, 73:487
3. J. Mo. Med. Assoc., 48:135
4. Med. Rec. & Annals, 43:1104

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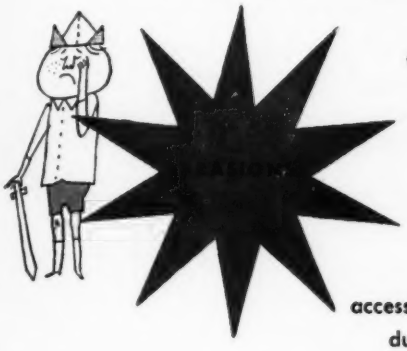

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Fractures and Dislocations of Knee	Dr. Frederick Lee Liebolt
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Continued from page 50

D. J. Zimmermann as president of the Hamblen County Medical Society. The other officers are Dr. James W. Richardson, vice-president, and Dr. Cecil F. Mynatt, Jr., secretary and treasurer.

The Greene County Medical Society has elected Dr. Haskell McCollum president for the 1956 term. Dr. R. S. Cowles, Jr., has been named vice-president, and Dr. R. G. Brown, secretary and treasurer.

The Consolidated Medical Assembly has elected the following officers for 1956: Dr. J. T. Holmes, McKenzie, president; Dr. Knox Tate, Bolivar, Dr. Harold Barker, Humboldt, and Dr. Oliver McCorkle, Henderson, vice-presidents; Dr. Stanford M. Herron has been re-elected secretary-treasurer.

Dr. C. Harold Steffee, Oak Ridge, has been appointed pathologist for Oak Ridge Hospital.

Dr. C. M. Clark, McMinnville, has been named president of the Warren County Development Foundation, Inc.

The new officers of the medical staff of LeBonheur Children's Hospital are: Dr. C. Barton Etter, Memphis, chief-of-staff; Dr. Clyde Croswell, vice-president; Dr. James Etteldorf, secretary; Dr. Albert M. Jones, chief of medicine; and Dr. Russell Patterson, chief of surgery.

Dr. Charles C. Trabue, IV, Nashville, president of the Tennessee State Medical Association, has been selected as a member of the board of trustees of the Tennessee Hospital Service Association.

Dr. John J. Redmon, Memphis, has been elected president of the staff at St. Joseph's Hospital. Dr. Charles R. Mason will serve as vice-president and Dr. C. D. Hawkes was re-elected secretary. Dr. Harold Feinstein is the new chief of Obstetrics and Gynecology department.

Dr. Ralph E. Cross, Johnson City, has been elected president of the John Sevier Chapter of the American Academy of General Practice. The other officers, both from Johnson City, are Dr. Joe C. Crumley, vice-president, and Dr. Byron Frizzell, secretary-treasurer.

Dr. George G. Keener, Kingsport, has recently been honored for 50 years in the practice of medicine.

Dr. Scott Bayer has succeeded Dr. R. M. Finks as head of the Baptist Hospital Medical Staff. Dr. W. D. Sumpter, Jr., is the new vice-president and Dr. J. Thomas Bryan is secretary-treasurer.

Dr. N. B. Callier, Chattanooga, has been certified by the Interstate Postgraduate Medical Association of North America.

Dr. Oliver William Hill, Knoxville, has been named chief-of-staff of the Children's Hospital. Dr. C. Sanford Carlson and Dr. Walter H. Benedict are the other officers.

Dr. Henry B. Gotten, president of the medical staff of Gartly-Ramsay Hospital, has been appointed chairman of the Civic Research Committee for Memphis.

Drs. John E. Kimball and William C. Pallas, Chat-

Continued on page 62

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every blood-building factor your anemic patient may need...in just one ROETINIC® capsule daily

for all treatable anemias: each ROETINIC capsule contains therapeutic amounts of all known hemapoietic factors.

Each ROETINIC capsule contains:

Intrinsic Factor-Vitamin B_{12} Concentrate	1 U.S.P. Oral Unit
Folic Acid	2 mg.
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Molybdenum Oxide (as the Trioxide)	1.5 mg.
Cobalt (as the Gluconate)	0.5 mg.
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Supplied: Bottles of 30 and 100 soft, soluble capsules.

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That cortisone and the salicylates have a complementary action has been well established.[1-5] In rheumatic conditions, functional improvement and a sense of feeling well are noted early. No withdrawal reactions have been reported.

One clinician states: "By a judicious combination of the two agents . . . it has been possible to bring about a much more favorable reaction in arthritis than with either alone. Salicylate potentiates the greatly reduced amount of cortisone present so that its full effect is brought out without evoking undesirable side reactions."[1]

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Rheumatoid arthritis . . . Rheumatoid spondylitis . . . Rheumatic fever . . . Bursitis . . . Still's disease . . . Neuromuscular affections

EACH TABLET CONTAINS:

Cortisone acetate	2.5 mg.
Sodium salicylate	0.3 Gm.
Aluminum hydroxide gel, dried	0.12 Gm.
Calcium ascorbate (equivalent to 50 mg. ascorbic acid)	60 mg.
Calcium carbonate	60 mg.

*U.S. Pat. 2,691,662

1. Busse, E.A.: Treatment of Rheumatoid Arthritis by a Combination of Cortisone and Salicylates. Clinical Med. 11:1105 (Nov., 1955).
2. Roskam, J., VanCawenberge, H.: Abst. in J.A.M.A., 151:248 (1953).
3. Coventry, M.D.: Proc. Staff Meet., Mayo Clinic, 29:60 (1954).
4. Holt, K.S., et al.: Lancet, 2:1144 (1954).
5. Spies, T.D., et al.: J.A.M.A., 159:645 (Oct. 15, 1955).

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VITA-FOOD Brewers' Yeast

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Continued from page 59

tanooga, have purchased the Woman's Hospital. They are planning to expand the present facility.

Dr. Phillipp C. Sottong, Chattanooga, has received certification by the American Board of Psychiatry and Neurology.

The Memphis Pediatric Society has elected Dr. William Price Steff president. Dr. William Graves has been named vice-president and Dr. Robert G. Jordan, secretary and treasurer.

Dr. Victor Hill, Knoxville, has been re-elected chief-of-staff at Fort Sanders Hospital. Drs. Richard Waterhouse and John Burkhart, also from Knoxville, were named vice chief-of-staff and secretary respectively.

Dr. Guy M. Francis has succeeded Dr. Cecil Newell as president of the Chattanooga-Hamilton County Medical Society. Dr. Harry Jones was re-elected secretary-treasurer.

The Nashville Academy of Medicine and Davidson

Continued on page 69

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FOR SALE—*Florida*—South Central ridge district. Retirement necessitates finding general practitioner to take over active, long established practice with minimum income $20,000 per year; fully equipped; exceptional laboratory and good hospital facilities; immediate occupancy; will introduce; price and terms nominal to right party. Florida license necessary. For details contact SMZ c/o SMJ.

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1. Wolfson, W. Q.: Mississippi Valley M. J. 77: 66, 1955

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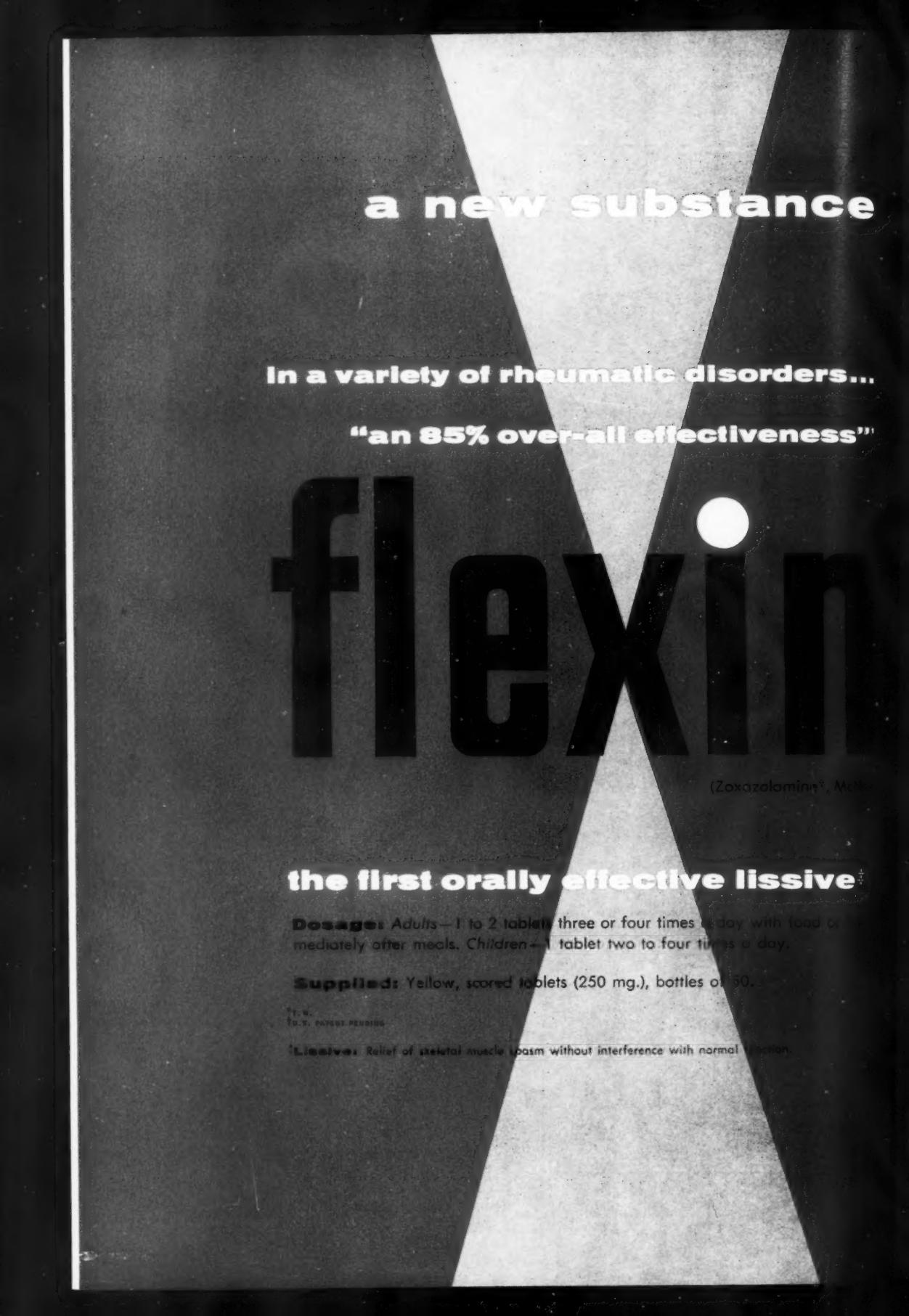
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Dosage: Adults—1 to 2 tablets three or four times a day with food or
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Supplied: Yellow, scored tablets (250 mg.), bottles of 30.
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Synthesized and characterized by McNeil Laboratories, FLEXIN relieves the disability and pain of skeletal muscle spasm—common denominator of many musculoskeletal and neurological disorders. "Its chief advantages are oral route of administration, long duration of action, and minimal side-effects."[2]

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FLEXIN provides superior and long-lasting—up to 6 hours—spasmolysis of voluntary muscle in low back syndromes, fibrositis, strains, sprains, and in noninflammatory rheumatic and arthritic disorders. In one preliminary report of 100 patients, FLEXIN demonstrated "...an 85% over-all effectiveness."[1]

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Other studies indicate that FLEXIN is of value in a highly significant number of patients with multiple sclerosis,[3,4] as well as in other spinal spasticity states, cerebral vascular lesions and parkinsonism.

(1) Smith, R. T.; Kroe, E. N.; Peek, W. P., and Hermann, I. F.: J.A.M.A. 160:745 (Mar. 3) 1956. (2) Arnols, W.: J.A.M.A. 160:742 (Mar. 3) 1956. (3) Abrahamsen, E. H., and Baird, H. W., III: J.A.M.A. 160:749 (Mar. 3) 1956. (4) Rodriguez-Gomez, M.; Valdes-Rodriguez, A., and Drew, A. E.: J.A.M.A. 160:752 (Mar. 3) 1956.

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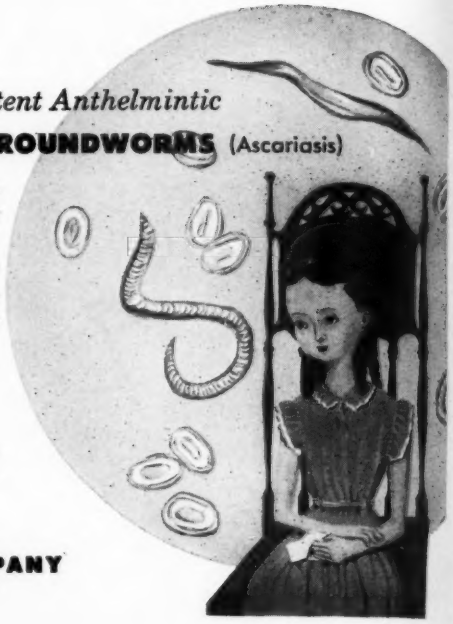

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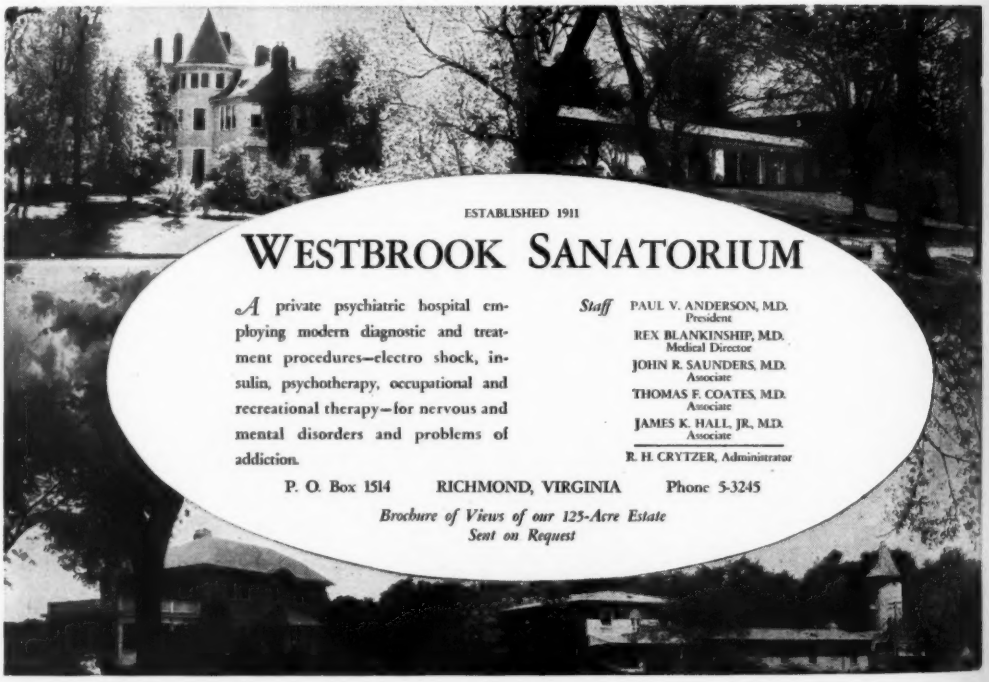

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VITAMINS LEDERLE
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assures full potency

Separate packaging of dry vitamins and diluent (mixed immediately before injection) assures the patient a more effective dose. May also be added to standard IV solutions.

Dosage: 2 cc. daily.

Each 2 cc. dose contains:

Thiamine HCl (B_1)	10 mg.
Riboflavin (B_2)	10 mg.
Niacinamide	50 mg.
Pyridoxine HCl (B_6)	5 mg.
Sodium Pantothenate	10 mg.
Ascorbic Acid (C)	300 mg.
Vitamin B_{12}	15 mcgm.
Folic Acid	3 mg.

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assured—another 5 million liters of air!

E. M. Age 43. Asthma of 10 years' duration. No longer relieved with epinephrine — jitters and cardiac palpitation instead. To date, a period of over two years, BRONKEPHRINE has repeatedly brought relief without side effects.[1]

As asthma advances in chronicity from mild through moderate to severe, few things are more disheartening to the physician (and frightening to the patient) than a parallel advance in drug tolerance. Increases in dosage often produce no more than an increase in side effects. It's a therapeutic point of no return that developing complications, emphysema and bronchostenosis, serve to emphasize.

BRONKEPHRINE staves off complications longer than most drugs, because it remains effective longer. One of the heartening qualities of BRONKEPHRINE is the fact that its prolonged use engenders a far lower incidence of tolerance in the patient than does epinephrine.[1] This supports the conclusion that BRONKEPHRINE is "... far more than just a substitute for epinephrine."[1]

Going a step further, BRONKEPHRINE's low level of excitation,[1,2,3] described as much less than that of epinephrine,[3] is not only a strong reason for its use in asthma in children,[1] but is also a factor favoring its use in *any* asthmatic.

However important BRONKEPHRINE's lack of tolerance and lack of excitation may be, its lack of pressor action, compared with other agents, is "most notable."[1] BRONKEPHRINE's potent bronchodilating action is distinguished by its *lack* of pressor effects.[1,3-6] This means that even hypertensive asthmatics may now receive effective anti-asthmatic therapy without the risk of increased blood pressure.

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BRONKEPHRINE® (ethylnorepinephrine Breon), for either intramuscular or intravenous injection—*your* drug of choice for *any* asthmatic—is available in 10 cc. multidose vials, containing 2 mg. BRONKEPHRINE in each cc.

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1. Foland, J. P.: Postgrad. Med. 18:397, 1955. 2. Schulte, J. W.; Reif, E. C.; Bacher, J. A.; Lawrence, W. S., and Tainter, M. L.: J. Pharmacol. & Exper. Therap. 71:62, 1941. 3. Bubert, H. M., and Doenges, J. P.: Bull. School Med. Univ. Maryland 31 (No. 1), 1946. 4. Tainter, M. L.; Pedden, J. R., and James, M.: J. Pharmacol. & Exper. Therap. 51:371, 1934. 5. Pedden, J. R.; Tainter, M. L., and Cameron, W. M.: J. Pharmacol. & Exper. Therap. 55:242, 1935. 6. Hartman, M. M.: Ann. Allergy 3:366, 1945.

Breon

Continued from page 62

County Medical Society has installed Dr. James C. Gardner as president for 1956. Dr. William O. Vaughan is the new president-elect, and Dr. Thomas S. Weaver is secretary-treasurer.

The White County Medical Society has elected Dr. Donald H. Bradley president. Dr. Robert F. Boker was named vice-president and Dr. Harold Andrews, secretary-treasurer. All the officers are from Sparta.

Dr. James S. Lyons, Rogersville, has been elected president of the Hawkins County Medical Society. Dr. W. E. Gibbons, also from Rogersville, will serve as secretary-treasurer.

Dr. C. E. Perry has been re-elected president of the Warren County Medical Society. Dr. B. C. Smoot is the new vice-president and Dr. Mary E. Thompson will serve again as secretary-treasurer.

The new officers of the Wilson County Medical Society are Dr. R. C. Kash, president, Dr. J. H. Tilley, vice-president, and Dr. T. R. Puryear, secretary.

Dr. R. Graham Fish has been named president of the Henry County Medical Society. Dr. Arthur C. Dunlap is the vice-president and Dr. Ray Smith, secretary. The officers are from Paris.

Dr. Joseph McCoin, Cleveland, has been named president of the medical staff at Bradley Memorial Hospital. The other officers are Dr. Wesley Barton, vice-president, and Dr. Chalmer Chastain, secretary.

Dr. Joseph W. Graves, Chattanooga, has qualified as a Diplomate of the American Board of Surgery.

Dr. W. T. Harris, Pulaski, has been appointed head of the March of Dimes Program.

Dr. H. H. Shoulders, Nashville, former president of the American Medical Association, has retired after 45 years of medical practice. He will devote his time to compiling papers prepared during his career.

The Memphis Thoracic Society has elected the following officers for 1956: Dr. Duane M. Carr, president; Dr. Franklin H. Alley, vice-president; and Michael M. Marolla, secretary-treasurer. All the officers are from Memphis.

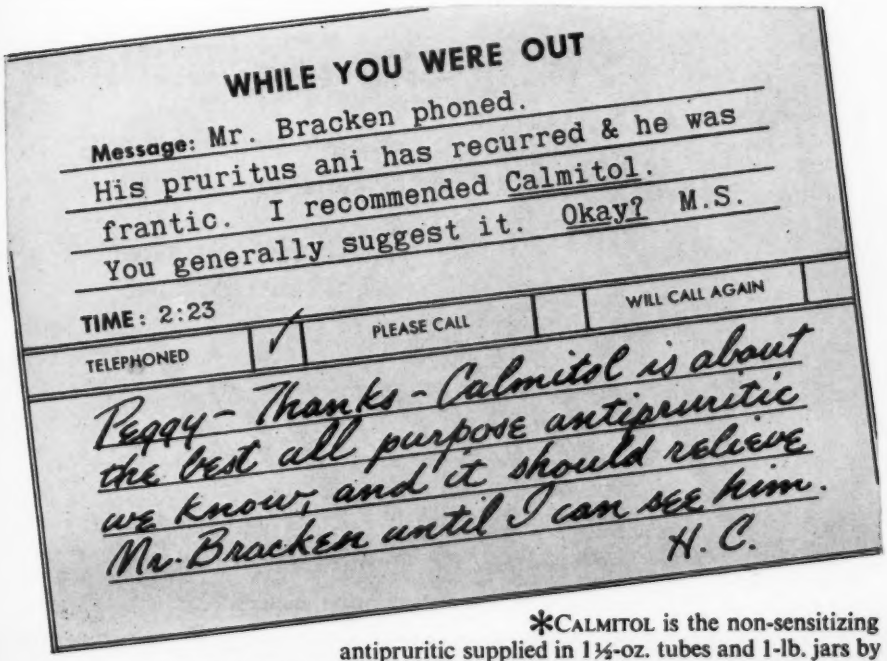
Dr. Morton J. Tendler, Memphis, General Surgeon, has received his promotion from Captain to Rear Admiral in the Naval Reserve.

The following physicians have been elected to serve the Jesse Holman Jones Hospital: Dr. J. E. Wilkison, president of the staff; Dr. Robert DeBerry, vice-president; and Dr. John S. Freeman, secretary. The hospital is nearing completion in Springfield.

Dr. John B. Youmans, dean of the Vanderbilt University School of Medicine and president-elect of the Association of American Medical Colleges, has been appointed head of a team of U. S. nutrition and health experts to survey conditions in Iran and Pakistan.

The new officers of the Uplands Cumberland Medical Center in Crossville are Dr. M. M. Young, chief-of-staff; Dr. H. F. Lawson, vice-chief-of-staff; Dr. W. E. Evans, secretary; Dr. R. M. Metcalfe, chief of

Continued on page 74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His pruritus ani has recurred & he was
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Peggy - Thanks - Calmitol is about
the best all purpose antipruritic
we know, and it should relieve
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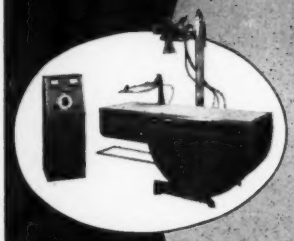

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The belladonna alkaloids present (equivalent to 7 minims of tincture) can be expected to offset any reserpine induced increase in gastric motility and secretion.

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(with prednisone)

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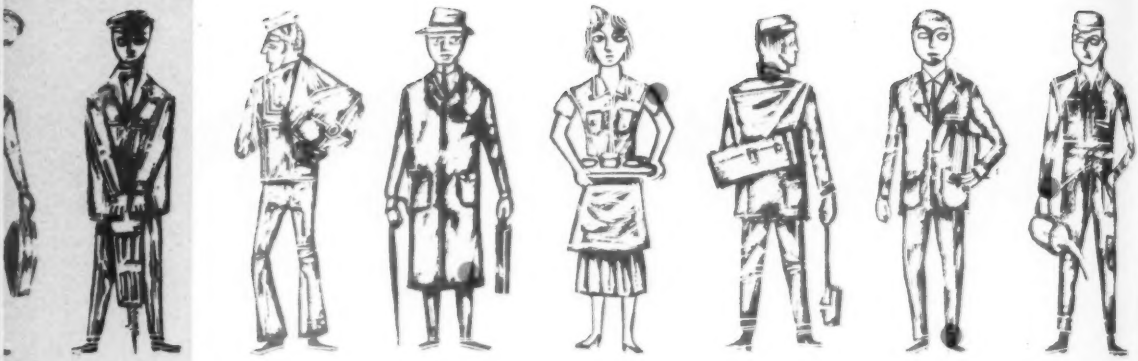
pain, stiffness, swelling relieved; function improved;
well feeling restored

also in fibrositis, myositis, neuritis, subacute or interval gout,
mild rheumatoid arthritis and spondylitis



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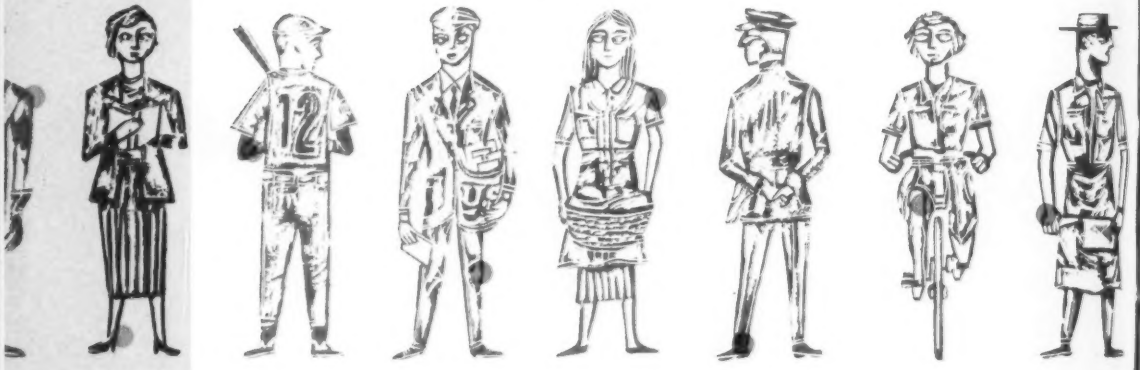
in common rheumatic arthritic disorders

when you want the distinct benefits of the newest corticosteroid therapy plus low, effective dosage for greater safety



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Prednisone 0.75 mg.—*best of the new*
Acetylsalicylic acid 325 mg.—*best of the old*
Ascorbic acid 20 mg.—*to fortify the patient against stress*
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Packaging: Bottles of 100 and 1000.

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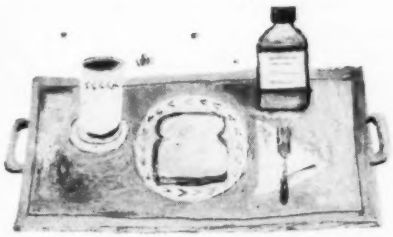

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125 mg. tetracycline per 5 cc. teaspoonful. *Bottles of 2 fl. oz. and 1 pint, packaged ready to use.*

READY TO USE No reconstitution required.

READILY ACCEPTED Unusual, delicious fruit flavors.

RAPIDLY ABSORBED Fine particle dispersion – therapeutic blood levels within one hour.

RAPIDLY EFFECTIVE Fast, trouble-free tetracycline for control of the widest range of infections.

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Continued from page 69

medicine; Dr. Donathan Ivey, chief of surgery; and Dr. E. W. Mitchell, member at large of the medical board.

Dr. Hubert K. Turley, Memphis, has succeeded Dr. Joseph C. Orman as president of the Memphis Urological Society. The other officers are Dr. William H. Walker, vice-president, and Dr. Fontaine B. Moore, secretary-treasurer.

The University of Tennessee College of Medicine has appointed six Memphis physicians assistants of the faculty. They are: Drs. Elmer W. Sydner, Jr., and Stephen A. Pridgen, department of surgery; Drs. John L. Hobson and Earle U. Scharff, and Maury Bronstein, department of internal medicine; and Dr. Harold T. McIver, department of otology, laryngology and rhinology. Dr. R. F. Ackerman, division of preventive medicine, and Dr. C. D. Hawkes, department of surgery, have been promoted from instructor to assistant professor. Drs. Fox Miller and J. W. Baird have been advanced from assistant to instructor in the department of dermatology. Additional appointments as assistants were: Dr. Prentiss A. Turman, division of obstetrics and gynecology; Dr. Joseph H. Brock, division of surgery; and Dr. Marvin L. Wolff, division of medicine.

TEXAS

Dr. Milford O. Rouse, immediate past chairman of the Council of the Southern Medical Association, testified before the Senate Finance Committee against H. R. 7225. Dr. Rouse represented the Texas Medical Association of which he is president-elect.

Drs. Gilbert H. Fletcher, Houston, and Herman C. Sehested, Fort Worth, have been inducted as Fellows of the American College of Radiology.

The Texas Radiological Society has elected Dr. J. R. Riley, Corpus Christi, president for 1956. Serving with him are Dr. T. G. Russell, Houston, president-elect; Dr. R. F. Wertz, Amarillo, first vice-president; Dr. H. C. Sehested, Fort Worth, second vice-president; and Dr. J. E. Miller, Dallas, secretary-treasurer.

Dr. David S. Stayer, Dallas, has been named to succeed Dr. Wendel A. Stiles, Dallas, on the Texas State Board of Medical Examiners.

Dr. O. H. Box, Jr., Bonham, was assigned chief medical officer of the Bonham Veterans Administration Center.

Dr. J. L. Goforth, Dallas, has been selected as the new president-elect of the American Society of Clinical Pathologists.

Dr. John C. Finerty, Galveston, has been elected president of the Texas Academy of Science.

Dr. Jack L. Walker, Austin, has recently passed the State Bar examination. He is now the second physician in Texas who is both a doctor and a lawyer.

The Texas section of the American Academy of Obstetrics and Gynecology has named Drs. Oran V. Prejean, Dallas, and Emerson K. Blewett, Austin, chairman and vice-chairman, respectively.

Continued on page 76

CHRONIC HEPATOBILIARY DISEASE

The *United States Dispensatory*, 25th ed. 1955, reports that "bile has a mild laxative action and is often efficacious in patients with chronic hepatobiliary disease."

Salicylated bile contained in CHOLOGESTIN is especially valuable for chronic hepatobiliary disease. The salicylates have a hydrocholeretic effect, diluting thick bile and thus avoiding the inspissation that often leads to gallstones or cholecystitis.

The salicylated bile extract contained in CHOLOGESTIN is combined with pancreatin and sodium bicarbonate, thus aiding intestinal digestion. Recommended dosage, 1 tablespoonful in cold water after meals.

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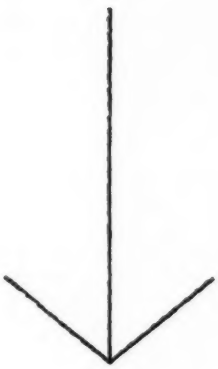

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Clinical samples sent to physicians upon request.

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Continued from page 74

Dr. Celso C. Stapp, El Paso, was elected president-elect of the Southwestern Medical Association. Dr. Russell L. Deter, El Paso, will serve as secretary.

Dr. Joe R. Donaldson, Pampa, has been appointed by the Board of Trustees to the Committee on Public Relations of the Texas Medical Association.

Dr. Thomas B. Bond, Fort Worth, immediate past president of the Radiological Society of North America, has been presented with the Gold-Headed Cane, the highest award of the Tarrant County Medical Society.

VIRGINIA

Dr. W. L. Ball has succeeded Dr. R. D. Butterworth as president of the Richmond Academy of Medicine. The other officers are: Dr. Elam C. Toone, Jr., president-elect; and Drs. M. M. Pinckney and D. Coleman Booker, vice-presidents.

The Fredericksburg Medical Association has named Dr. James G. Willis president. Dr. Nancy Whitticar will serve as vice-president and Dr. Charles P. Barnett, secretary-treasurer.

Dr. Hermann F. Diamant has been elected president of the Arlington County Medical Society. Serving with him are Dr. Stephen J. Sheey, vice-president, Dr. T. A. McGavin, secretary, and Dr. Clifford E. Bagley, treasurer. Dr. H. C. Bates was appointed member at large on the Board of Directors.

The Northern Virginia Academy of Surgery has named the following officers for 1956: Dr. Lloyd Burk, president; Dr. John Alexander, vice-president; Dr. Leonard Weyl, secretary; Dr. Michael Puzak, treasurer; and Drs. Andrew Welebir, Garrett Swain, and Allen Ferry, counsellors. All the officers are from Arlington.

Dr. David C. Wilson has submitted his resignation as head of the Department of Neurology and Psychiatry at the University of Virginia. Dr. R. W. Garnett, Jr., was named acting chairman.

Dr. Walter B. Martin, Norfolk, immediate past president of the American Medical Association, has received the Distinguished Service Award as Norfolk's "First Citizen of 1955."

A portrait of Dr. Halstead Shipman Hedges, Charlottesville, has been unveiled in the lobby of the Martha Jefferson Hospital in Charlottesville. Dr. Hedges recently celebrated his 88th birthday and is still working five days a week in his office.

The Waynesboro Community Hospital staff has named the following officers: Dr. J. Treacy O'Hanlan, president; Dr. James L. Davis, vice-president; Dr. W. A. MacIlwaine, secretary; and Dr. J. Powell Anderson, treasurer.

Dr. J. Richmond Low, Fredericksburg, is the new president of the staff of Mary Washington Hospital. Dr. John B. Rose is vice-president and Dr. T. Stacy Lloyd is secretary-treasurer. Dr. J. C. MacKnight will serve as the representative on the hospital's board of governors.

Dr. R. D. Hudnall, Lilian, has been re-elected Northumberland County supervisor.

Continued on page 85

Functional gyn. disorders in the years of menopause

Irritability
Palpitations
Flushes & Sweats

Bellergal®

Average Dose:
3-4 Tablets Daily

Proven safe
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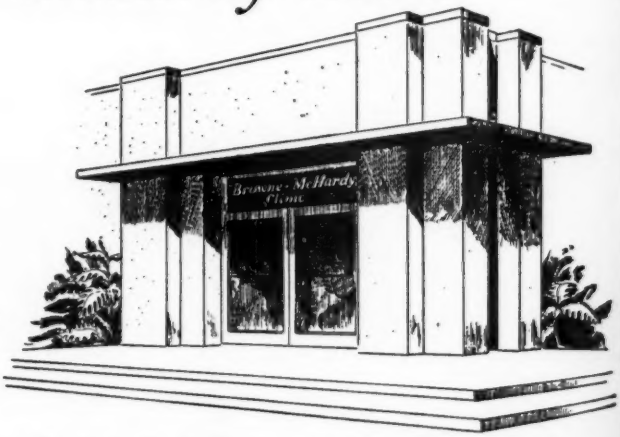

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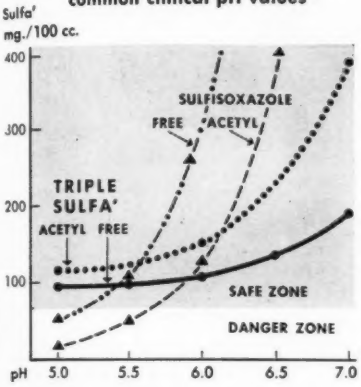
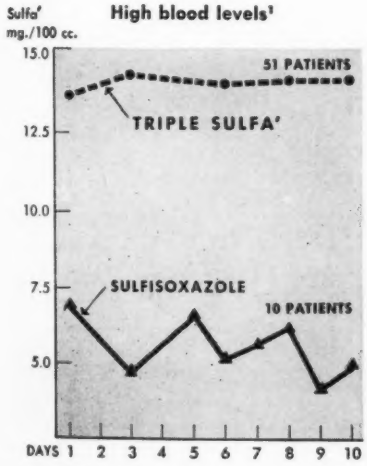
"maximum therapeutic efficiency at a minimum risk to the patient..."[1]

High urine solubility at common clinical pH values[1]



A triple sulfa' has better solubility at the acidic reactions of urine in many patients.[1] (Chart adapted).

High blood levels[1]



A triple sulfa' produced blood levels twice as high as those of the same dose of sulfisoxazole (6 Gm. per day).[1] (Chart adapted).

Tripazine*

Brand of meth-dia-mer sulfonamides

TRIPLE SULFONAMIDE TABLETS

Triple sulfonamide mixtures such as Tripazine are "preparations of choice" for treatment of sulfonamide-sensitive infections. "High blood levels and excellent tissue diffusion can thus be combined with a few sensitization reactions and reliable protection of the kidney."[1]

Tripazine is highly useful in

- Systemic or localized infections, particularly those caused by hemolytic streptococci (Lancefield's Group A) • pneumococci • micrococci (staph.) • meningococci • Klebsiella pneumoniae • Hemophilus influenzae • Neisseria gonorrhoeae

- in such diseases as
  nonviral pneumonia • bacillary dysentery • urinary tract infections • meningococcic bacteremia and meningitis • gonococcic urethritis • and in conjunction with an antibiotic in actinomycosis and gas gangrene

- for prophylaxis of
  rheumatic fever • meningococcal and streptococcal infections • bacillary dysentery during epidemics

Each scored, gray Tripazine tablet supplies the closely related sulfonamides: sulfadiazine, sulfamerazine, sulfamethazine, 0.167 Gm. each.

0.5 Gm. tablets, in bottles of 100 and 1000.

1. Lehr, D.: Present Status of Sulfonamide Therapy, Mod. Med. **23**:111 (Jan. 15) 1955

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Erythromycin in treatment of pyoderma

8/12/55

DISCHARGE SUMMARY

Patient, white female, age 39, entered hospital with a diagnosis of lymphoma, proved to be lymphosarcoma by biopsy.

Initially she was treated by X-ray radiation, adrenal cortical hormone and an antinauseant. During this regimen she developed a generalized rash which became infected. This was a drug reaction with infection due either to (1) scratching or (2) a low WBC count due to radiation. A number of boil-like lesions appeared over the body.

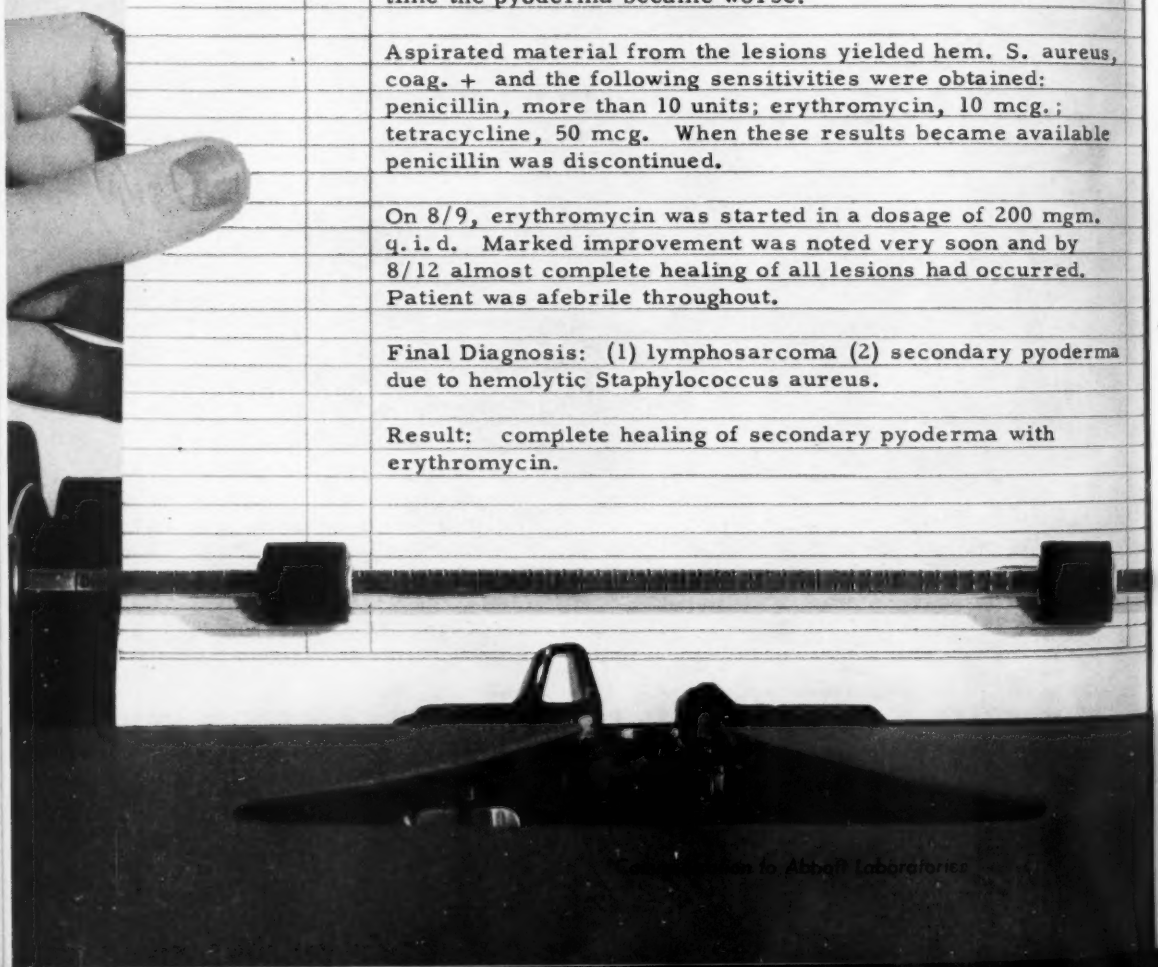
On 8/4 penicillin was started in a dosage of 600,000 units daily. Penicillin was continued for six days during which time the pyoderma became worse.

Aspirated material from the lesions yielded hem. S. aureus, coag. + and the following sensitivities were obtained: penicillin, more than 10 units; erythromycin, 10 mcg.; tetracycline, 50 mcg. When these results became available penicillin was discontinued.

On 8/9, erythromycin was started in a dosage of 200 mgm. q. i. d. Marked improvement was noted very soon and by 8/12 almost complete healing of all lesions had occurred. Patient was afebrile throughout.

Final Diagnosis: (1) lymphosarcoma (2) secondary pyoderma due to hemolytic Staphylococcus aureus.

Result: complete healing of secondary pyoderma with erythromycin.



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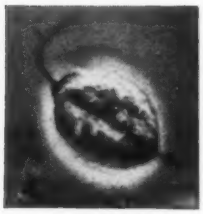
HOW DAVIS TECHNIC

EXPLODES

HIDDEN TRICHOMONADS



Too often treatment fails to cure vaginal trichomoniasis because parasites survive and set up new foci of infection.

Now you can overcome this problem with VAGISEC® liquid and jelly, using the Davis technic.† VAGISEC liquid dissolves mucinous materials, penetrates thoroughly, and quickly reaches and explodes the hidden trichomonads.

Proved highly effective. VAGISEC liquid (originally "Carlendacide") is the formula developed by Dr. Carl Henry Davis, noted gynecologist and author, and C. G. Grand, research physiologist.[1] Clinical data show better than 90 per cent success with VAGISEC.[2]

Overwhelmingly powerful. VAGISEC liquid explodes trichomonads within 15 seconds of contact![3] Three surface-acting agents attack the parasite: A chelating agent removes the calcium of the calcium proteinate; a wetting agent removes the lipids; a detergent denatures the protein.

The Davis technic. VAGISEC liquid, as a vaginal scrub, is used in office therapy. VAGISEC liquid and jelly are for home use.

Prevent re-infection. Many wives become re-infected because husbands harbor trichomonads.[2] To prevent re-infection, prescribe the protection afforded by Schmid high quality condoms—the superior RAMSES® rubber prophylactic, transparent and tissue-thin, yet strong, or XXXX (FOUREX)® skins of natural animal membrane, pre-moistened.

References: 1. Davis, C. H., and Grand, C. G.: Am. J. Obst. & Gynec. 68:559 (Aug.) 1954. 2. Davis, C. H.: West. J. Surg. 63:53 (Feb.) 1955. 3. Davis, C. H.: J.A.M.A. 157:126 (Jan. 8) 1955.

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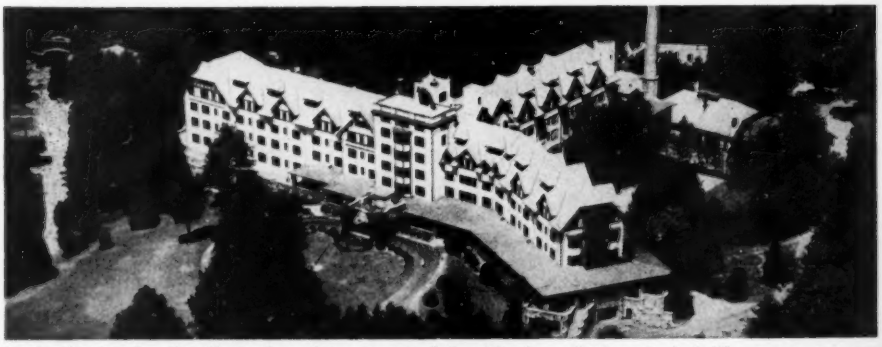

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to help your patients past 40 correct . . .

biliary dyspepsia & constipation

Rehfuss[1] has stated that after 40, constipation is "the greatest single medical problem" and Shaftel[2] reports on the exceptional clinical results of Caroid® and Bile Salts in chronic constipation typical of this age bracket.

These cases do not respond to laxatives alone because associated complaints of flatulence and indigestion point to biliary dysfunction and digestive impairment as factors *coexisting* with constipation.

Caroid and Bile Salts Tablets are ideally suited for broad coverage in these cases. Through their 3-way action, they:

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- Improve Digestion
- Provide Gentle Laxation

Tablets of Caroid and Bile Salts with Phenolphthalein have been clinically established and proved over the years. Try them in your next case of biliary dyspepsia and constipation.

Available—bottles of 20, 50, 100. For professional samples address:

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CAROID AND BILE SALTS *tablets*

1. Rehfuss, M. E.: Indigestion, Philadelphia, W. B. Saunders Co., 1943, p. 322.
2. Shaftel, H. E.: J. Am. Geriatrics Soc. *1*:549 (Aug.) 1953.

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LONG-ACTING TABLETS CONTAINING PENTAERYTHRITOL TETRANITRATE (PETN) 10 MG. AND RAUWILOID® (ALSEROXYLON) 1 MG.

- Reduces incidence and severity of attacks
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- Lowers blood pressure in hypertensives—not in normotensives
- Produces objective improvement demonstrable by ECG

Dosage: One to two tablets q.i.d. before meals and on retiring.

No other single medication can do so much for your anginal patients

Riker LOS ANGELES

Continued from page 76

Dr. Joseph P. Whittle has succeeded Dr. Glenn W. Phipps as president of the Petersburg Medical faculty. Dr. William S. Grizzard was elected vice-president and Dr. James D. Mason, secretary-treasurer.

The staff of the Northampton-Accomack Memorial Hospital has elected the following officers: Dr. Walter Eskridge, Parksley, president; Dr. W. C. Henderson, Nassawadox, vice-president; and Dr. J. R. Hamilton, Nassawadox, secretary.

Dr. John B. Truslow, Dean of the School of Medicine, Medical College of Virginia since 1951, has accepted an appointment as executive director of the medical branch of the University of Texas at Galveston.

Dr. Frank Whitehouse has been named president of the medical staff of the Virginia Baptist Hospital in Lynchburg. The other officers are: Dr. W. H. Barney, vice-president; Dr. Frank M. Buck, Jr., secretary; and Drs. Buck, Holcombe Hurt, and Clyde Adkerson, trustees.

Dr. Emily C. Runyon, the first woman doctor to practice in Richmond, has celebrated her 98th birthday.

Dr. John L. Harris, Jr., has been appointed chairman of the 1956 Heart Campaign in Roanoke.

Dr. Harvey B. Haag, Richmond, has resigned as chairman of the Department of Physiology and Pharmacology of the Medical College of Virginia. He will retain his position as professor of pharmacology, but will be able to devote more time to research and writing.

Dr. David Hume, assistant professor of surgery and director of surgical research laboratories at Harvard Medical School, has been appointed professor of surgery and chairman of the surgery department at the Medical College of Virginia.

The new officers of the Arlington Hospital staff are: Dr. John H. Judson, president, Drs. K. C. Latven and John E. Alexander.

Dr. W. J. Hagood was elected chief-of-staff of the Halifax Community Hospital in South Boston. Others elected to serve with him are Dr. C. B. Dixon, vice-president; and Dr. W. G. Wysor, secretary. Drs. Hagood, W. B. Brann, W. L. Eastlack, W. G. Puryear, and L. P. Bailey will serve as members of the Executive Committee.

WEST VIRGINIA

Dr. George M. Lyon, assistant chief medical director for research and education in the Veterans Administration's Department of Medicine and Surgery, has assumed the duties of manager of the Huntington Veterans Administration Hospital. Dr. Lyon succeeded Dr. Haughton W. Baxley, who has been reassigned to professional duties with the Department of Medicine and Surgery.

Drs. A. J. Villani, Welch, and Charles W. Merritt, Beckley, have been inducted into fellowship in the American Academy of Obstetrics and Gynecology.

In recognition of his status of senior fellowship in the American Academy of Ophthalmology and

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MAJOR ADVANTAGES: Increases appetite, helps patients gain weight. Stimulates hemopoiesis. Available as Elixir, Tablets and Injectables for maximum flexibility of dosage. Elixir and Tablets readily blend with milk, juices, infant formulas.

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the first practical
MUMPS VACCINE

An effective immunizing antigen for prevention of mumps in children or adults where indicated. Immunizes for about one year.

Packages: 2 cc. vial (1 immunization)
10 cc. vial (5 immunizations)

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Otolaryngology, Dr. H. T. Schiefelbein, Welch, has been awarded a 25-year gold pin.

Dr. John J. Brandabur, Huntington, has been appointed chief medical examiner for the Chesapeake & Ohio Railway.

The Chesapeake and Potomac Telephone Company of West Virginia has named Dr. John T. Jarrett, Charleston, medical officer.

Dr. John O. Rankin, Wheeling, has been elected a member of the Board of Governors of the American College of Surgeons.

Dr. Hiram W. Davis, superintendent of Huntington State Hospital, has received certification by the American Board of Psychiatry and Neurology. He also has been certified by the American Psychiatric Association as a mental hospital administrator.

The Mercer County Medical Society has elected the following officers for 1956: Dr. Paul Champion, president; Dr. George E. Snider, vice-president; Dr. John J. Mahood, secretary; and Dr. D. V. Kechele, treasurer.

Dr. Joseph Gilman has succeeded Dr. C. Fred Fisher as president of the Harrison County Medical Society. Dr. Marcus E. Farrel was named vice-president and Dr. Creed C. Greer, treasurer. Dr. Lawrence B. Thrush was re-elected secretary.

The new officers for the Hancock County Medical Society are Dr. Richard A. Rose, Weirton, president; Dr. Arthur M. Phillips, Weirton, vice-president; and Dr. David S. Pugh, Chester, secretary-treasurer.

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SUNSHINE 360 DAYS OF THE YEAR!

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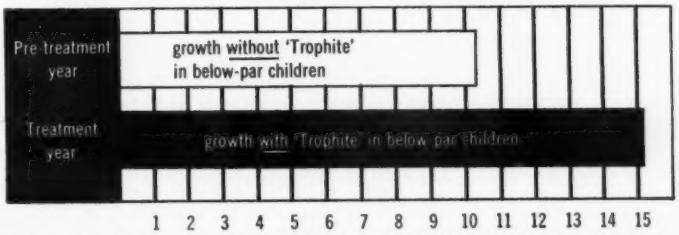
for the child
who "just won't eat"

In a one-year, controlled study of children with secondary growth failure or clinical malnutrition, 'Trophite'—high dosage of B_{12} and B_1—increased growth by nearly 50% (see graph below).

AVERAGE GROWTH AND DEVELOPMENT RATE—LEVELS/YEAR


Pre-treatment year
growth without 'Trophite' in below-par children
Treatment year
growth with 'Trophite' in below-par children
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

(These levels represent growth in terms of both height and weight according to Wetzel's Grid technique.)

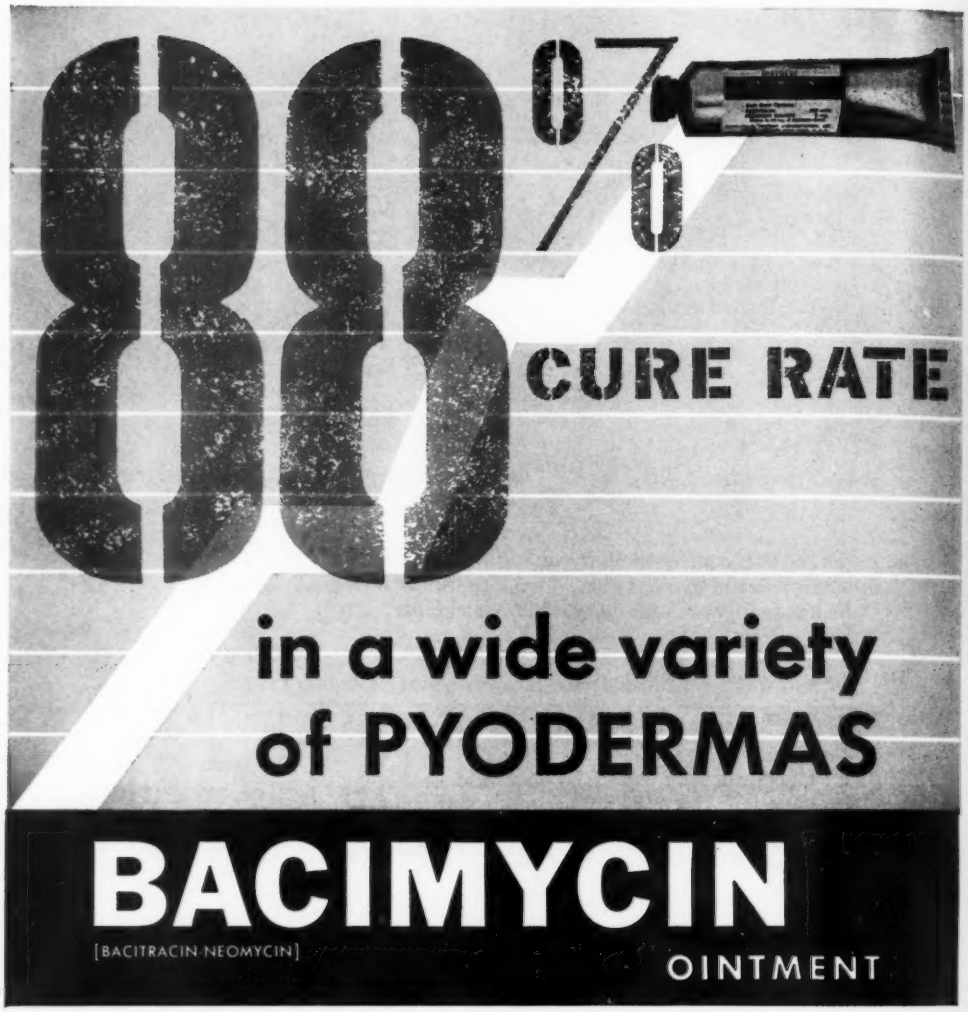
Try 'Trophite' in the child who "just won't eat." Both you and his parents will be delighted with his new appetite.

'Trophite' is available both as a truly delicious liquid and as tablets. Each teaspoonful (5 cc.) or tablet supplies: 25 mcg. B_{12}, 10 mg. B_1.

the high potency combination of B_{12} and B_1

Trophite* *for* appetite

*T.M. Reg. U.S. Pat. Off. *Smith, Kline & French Laboratories, Philadelphia*



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In a recent study[1] of 53 patients with various types of pyodermas, the use of BACIMYCIN Ointment "...resulted in a cure rate of 88%..." and not a single case of sensitization or primary irritation occurred.

Impetigo, infectious eczematoid dermatitis, atopic eczema, secondary infections superimposed on dermatitis venenata, and folliculitis were among the common skin infections that showed marked improvement with BACIMYCIN therapy.

Supplied in ½-oz. tubes for prescriptions; in 100 gm. jars for hospital use.

Literature and samples on request.

1. Greenhouse, J. M., and Ryle, W. C.: A.M.A. Arch. Dermat. & Syph. 69:366, Mar., 1954.

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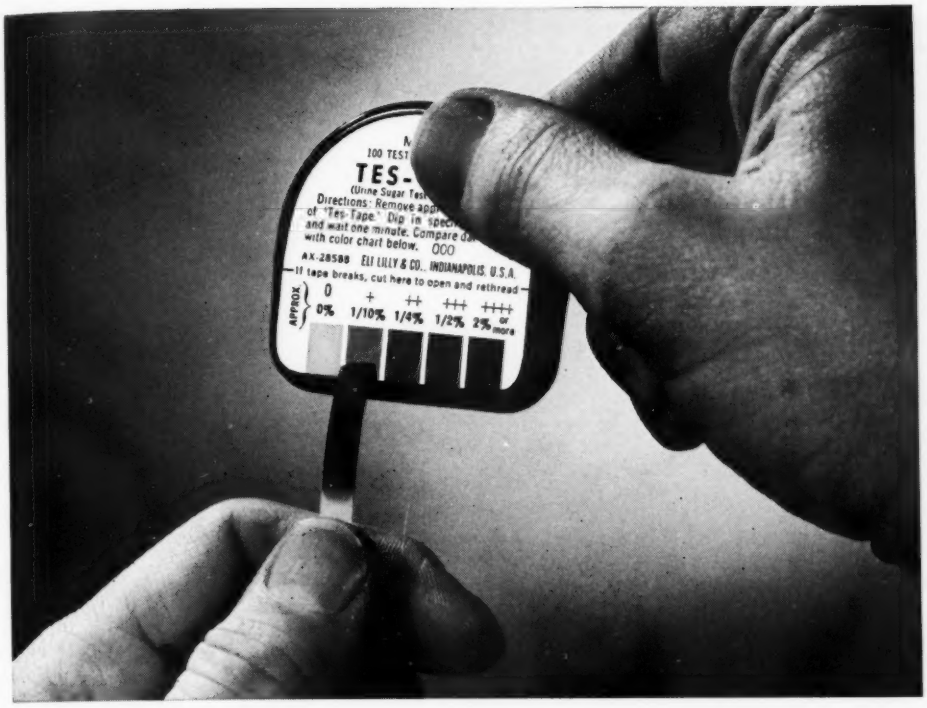

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'Tes-Tape' completely eliminates the need for test tubes, heat, reagents, or any other paraphernalia in quantitative urine sugar determinations. Simply moisten a strip of 'Tes-Tape' with the specimen. After just sixty seconds, compare it with the color chart on the 'Tes-Tape' dispenser. Then read off the percentage of sugar. The selective action of 'Tes-Tape' prevents false positive reactions, assures complete accuracy.

The convenient size of the 'Tes-Tape' dispenser permits you to carry it on house calls for on-the-spot determinations. Your patients also will welcome the convenience, simplicity, and accuracy of 'Tes-Tape.'

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